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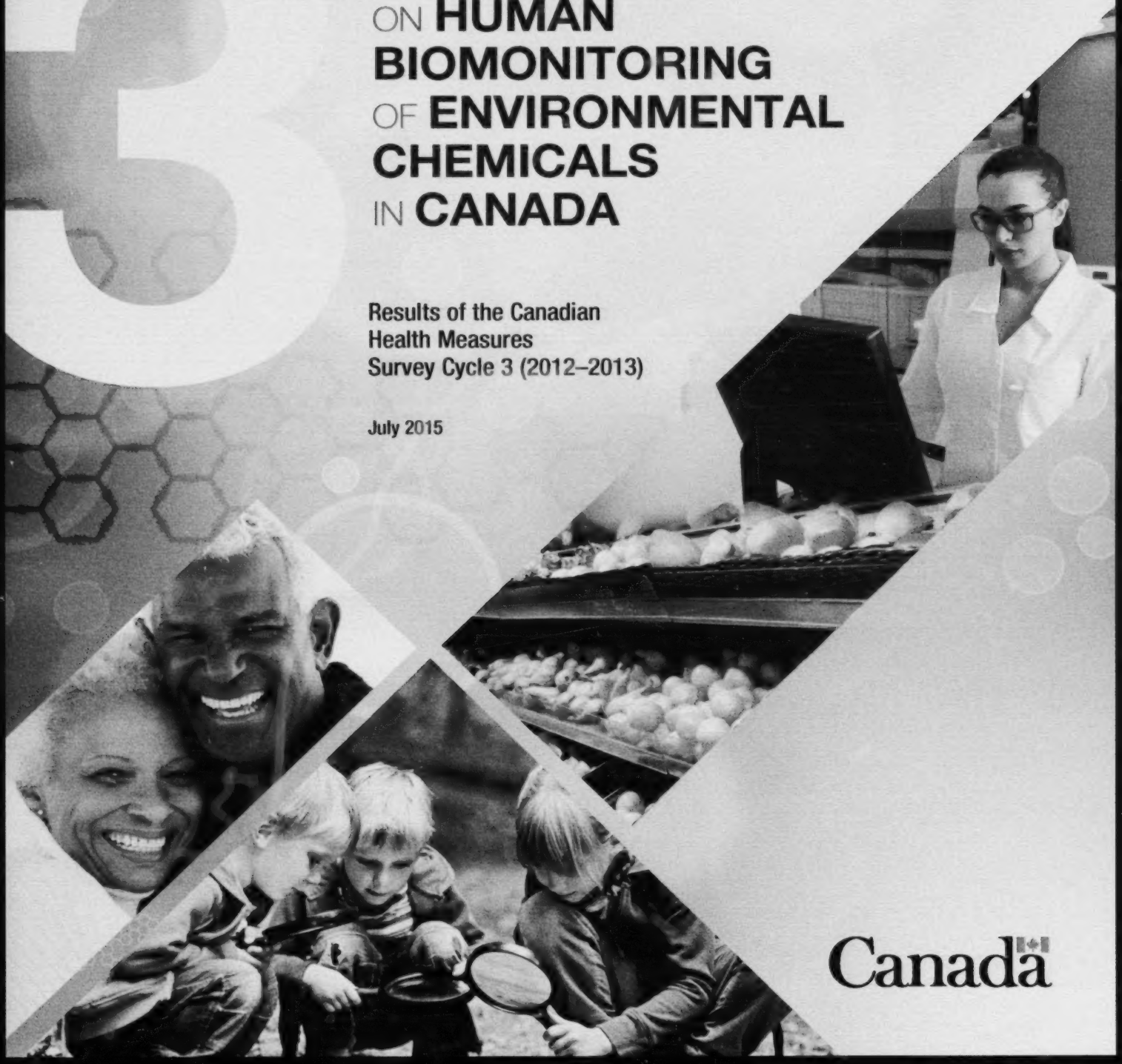
THIRD REPORT ON HUMAN BIOMONITORING OF ENVIRONMENTAL CHEMICALS IN CANADA

Results of the Canadian Health Measures Survey Cycle 3 (2012–2013)

July 2015



Canada

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Results for Acrylamide

ACRYLAMIDE HAEMOGLOBIN ADDUCT

Acrylamide haemoglobin adduct – Geometric means and selected percentiles of whole blood concentrations (pmol/g Hb) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	3 (2012–2013)	2492	0	73 (65–82)	35 (30–40)	64 (57–70)	190 (160–230)	240 (190–290)
Males	3–79	3 (2012–2013)	1225	0	79 (69–90)	36 (31–40)	68 (61–75)	200 (150–260)	270[E] (160–380)
Females	3–79	3 (2012–2013)	1267	0	68 (59–78)	35 (29–41)	60 (51–69)	180 (130–230)	210 (180–250)
Total	3–5	3 (2012–2013)	471	0	59 (55–64)	39 (35–43)	59 (55–63)	87 (73–100)	100 (82–120)
Total	6–11	3 (2012–2013)	505	0	61 (57–65)	37 (34–41)	6 (58–67)	100 (88–110)	110 (98–120)
Total	12–19	3 (2012–2013)	507	0	63 (59–67)	37 (31–42)	57 (53–61)	110 (87–130)	170[E] (96–240)
Total	20–39	3 (2012–2013)	348	0	80 (65–97)	34 (24–43)	74 (59–89)	190 (130–260)	260 (190–340)
Total	40–59	3 (2012–2013)	311	0	83 (67–100)	35 (24–47)	66 (49–82)	230 (180–290)	330 (210–450)
Total	60–79	3 (2012–2013)	350	0	63 (59–68)	34 (29–40)	62 (59–65)	130 (100–150)	160 (130–190)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

GLYCIDAMIDE HAEMOGLOBIN ADDUCT

Glycidamide haemoglobin adduct — Geometric means and selected percentiles of whole blood concentrations (pmol/g Hb) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	3 (2012–2013)	2492	0.76	68 (62–75)	36 (34–38)	65 (59–70)	150 (120–180)	190 (150–220)
Males	3–79	3 (2012–2013)	1225	1.14	69 (62–77)	37 (35–38)	66 (58–74)	170 (120–210)	210 (160–260)
Females	3–79	3 (2012–2013)	1267	0.39	67 (60–74)	36 (32–40)	64 (57–71)	130 (100–160)	160 (120–200)
Total	3–5	3 (2012–2013)	471	0	80 (75–85)	51 (43–59)	78 (74–81)	120 (110–130)	140 (120–150)
Total	6–11	3 (2012–2013)	505	0	73 (70–77)	47 (45–48)	74 (68–81)	110 (97–120)	130 (110–150)
Total	12–19	3 (2012–2013)	507	1.18	62 (59–65)	35 (32–37)	60 (57–62)	110 (95–130)	160 (120–200)
Total	20–39	3 (2012–2013)	348	0.86	72 (60–86)	38 (30–46)	74 (62–86)	160 (130–190)	210 (160–260)
Total	40–59	3 (2012–2013)	311	1.29	71 (58–86)	36 (31–42)	62 (50–74)	180 (140–220)	230 (170–290)
Total	60–79	3 (2012–2013)	350	1.71	60 (53–67)	34 (29–39)	60 (50–70)	100 (90–110)	120 (110–130)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

Results for Environmental Phenols

BISPHENOL A

Bisphenol A (BPA) — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 6–79 years[a], Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	6–79	1 (2007–2009)	5476	9.26	1.2 (1.1–1.2)	F	1.3 (1.1–1.4)	4.6 (4.1–5.1)	6.9 (5.6–8.2)
Total	6–79	2 (2009–2011)	2036	5.26	1.2 (1.1–1.3)	0.27 (0.22–0.31)	1.2 (1.1–1.3)	4.5 (3.9–5.0)	6.7 (4.8–8.5)
Total	6–79	3 (2012–2013)	5149	8.00	1.1 (1.0–1.2)	0.29 (0.26–0.32)	1.1 (0.95–1.2)	4.2 (3.6–4.8)	6.6 (5.7–7.5)
Males	6–79	1 (2007–2009)	2659	7.67	1.3 (1.2–1.4)	0.23[E] (<LOD–0.34)	1.4 (1.2–1.6)	4.4 (3.9–5.0)	6.7 (5.3–8.1)
Males	6–79	2 (2009–2011)	1021	4.90	1.3 (1.1–1.4)	0.27[E] (<LOD–0.37)	1.3 (1.1–1.5)	4.6 (4.1–5.2)	7.3[E] (4.0–11)
Males	6–79	3 (2012–2013)	2566	7.21	1.2 (1.1–1.3)	0.35 (0.25–0.46)	1.2 (0.98–1.4)	4.4 (3.7–5.0)	6.5 (5.5–7.5)
Females	6–79	1 (2007–2009)	2817	10.76	1.0 (0.93–1.2)	<LOD	1.1 (0.94–1.3)	4.9 (4.2–5.5)	7.0 (5.3–8.6)
Females	6–79	2 (2009–2011)	1015	5.62	1.2 (1.0–1.3)	0.26 (0.21–0.32)	1.1 (0.98–1.3)	4.0 (2.9–5.2)	6.6 (4.8–8.4)
Females	6–79	3 (2012–2013)	2583	8.79	1.0 (0.88–1.2)	0.29 (<LOD–0.38)	1.0 (0.90–1.1)	4.1 (3.2–4.9)	6.9 (5.3–8.5)

a For the purpose of total population comparisons, only values from participants aged 6–79 years were included as participants under the age of 6 years were not included in cycle 1 (2007–2009).

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Bisphenol A (BPA) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 6–79 years[a], Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	6–79	1 (2007–2009)	5462	9.26	1.4 (1.3–1.5)	0.39 (0.30–0.49)	1.3 (1.2–1.5)	4.7 (4.0–5.4)	7.2 (6.4–8.0)
Total	6–79	2 (2009–2011)	2027	5.26	1.2 (1.1–1.2)	0.39 (0.34–0.44)	1.0 (0.96–1.0)	4.0 (3.5–4.5)	6.6 (4.8–8.5)
Total	6–79	3 (2012–2013)	5147	8.00	1.1 (1.0–1.2)	0.40 (0.35–0.44)	0.98 (0.92–1.0)	3.3 (2.9–3.7)	5.7 (4.2–7.2)
Males	6–79	1 (2007–2009)	2650	7.67	1.3 (1.2–1.4)	0.38 (0.28–0.48)	1.2 (1.0–1.4)	3.9 (3.5–4.3)	6.0 (5.3–6.7)
Males	6–79	2 (2009–2011)	1018	4.90	1.0 (0.94–1.2)	0.36 (0.24–0.48)	0.99 (0.90–1.1)	3.5 (2.6–4.3)	5.8[E] (3.4–8.3)
Males	6–79	3 (2012–2013)	2566	7.21	1.0 (0.94–1.1)	0.38 (0.31–0.45)	0.97 (0.87–1.1)	3.0 (2.6–3.4)	4.8 (3.5–6.2)
Females	6–79	1 (2007–2009)	2812	10.76	1.5 (1.4–1.6)	<LOD	1.5 (1.3–1.6)	5.9 (4.9–6.9)	8.5 (6.9–10)
Females	6–79	2 (2009–2011)	1009	5.62	1.3 (1.2 – 1.4)	0.48 (0.39 – 0.57)	1.1 (0.89 – 1.3)	4.5 (3.4 – 5.5)	6.8 (4.5 – 9.2)
Females	6–79	3 (2012–2013)	2581	8.79	1.2 (1.1 – 1.3)	0.41 (0.37 – 0.45)	0.99 (0.92 – 1.1)	3.9 (2.9 – 4.8)	6.9[E] (4.1 – 9.7)

a For the purpose of total population comparisons, only values from participants aged 6–79 years were included as participants under the age of 6 years were not included in cycle 1 (2007–2009).

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

Bisphenol A (BPA) — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79b	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–79	2 (2009–2011)	2560	5.04	1.2 (1.1–1.3)	0.27 (0.22–0.31)	1.2 (1.1–1.3)	4.5 (4.0–5.0)	6.7 (4.8–8.6)
Total	3–79	3 (2012–2013)	5670	7.80	1.1 (1.0–1.2)	0.29 (0.27–0.32)	1.1 (0.95–1.2)	4.2 (3.6–4.8)	6.6 (5.8–7.5)
Males	3–79b	1 (2007–2009)	–	–	–	–	–	–	–
Males	3–79	2 (2009–2011)	1281	4.84	1.3 (1.1–1.5)	0.27 (<LOD–0.36)	1.3 (1.1–1.5)	4.6 (4.1–5.2)	7.9[E] (4.3–11)
Males	3–79	3 (2012–2013)	2826	6.97	1.2 (1.1–1.4)	0.35 (0.25–0.46)	1.2 (0.99–1.4)	4.4 (3.7–5.0)	6.4 (5.2–7.7)
Females	3–79b	1 (2007–2009)	–	–	–	–	–	–	–
Females	3–79	2 (2009–2011)	1279	5.24	1.2 (1.0–1.3)	0.26 (0.21–0.32)	1.1 (0.98–1.3)	4.1 (3.0–5.1)	6.6 (4.9–8.4)
Females	3–79	3 (2012–2013)	2844	8.61	1.0 (0.88–1.2)	0.29 (<LOD–0.39)	1.0 (0.91–1.1)	4.1 (3.3–4.9)	6.9 (5.4–8.4)
Total	3–5b	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–5	2 (2009–2011)	524	4.20	1.4 (1.1–1.8)	0.30[E] (<LOD–0.46)	1.3 (1.1–1.5)	5.4[E] (1.9–9.0)	9.9[E] (5.5–14)
Total	3–5	3 (2012–2013)	521	5.76	1.2 (0.87–1.6)	0.29[E] (<LOD–0.47)	1.2 (0.95–1.5)	4.0 (2.6–5.4)	6.0 (4.3–7.7)
Total	6–11	1 (2007–2009)	1031	6.79	1.3 (1.2–1.4)	0.28 (<LOD–0.37)	1.3 (1.1–1.6)	4.5 (3.8–5.1)	7.1 (5.5–8.7)
Total	6–11	2 (2009–2011)	516	5.81	1.4 (1.1–1.7)	0.25[E] (<LOD–0.41)	1.3 (0.94–1.7)	4.6[E] (2.6–6.6)	F
Total	6–11	3 (2012–2013)	1004	5.58	1.2 (1.1–1.4)	0.39 (0.30–0.49)	1.2 (1.0–1.3)	3.8 (2.8–4.8)	5.3[E] (3.0–7.6)
Total	12–19	1 (2007–2009)	980	6.22	1.5 (1.3–1.8)	0.29 (0.22–0.36)	1.6 (1.3–1.8)	5.9 (4.8–7.0)	8.3 (6.2–10)
Total	12–19	2 (2009–2011)	512	4.69	1.3 (1.1–1.6)	0.35 (0.23–0.47)	1.3 (0.99–1.6)	4.4 (2.9–5.9)	7.6[E] (4.3–11)
Total	12–19	3 (2012–2013)	992	6.15	1.3 (1.1–1.6)	0.30[E] (<LOD–0.46)	1.4 (1.3–1.6)	4.8 (3.4–6.2)	8.0[E] (4.1–12)
Total	20–39	1 (2007–2009)	1165	8.84	1.3 (1.2–1.5)	F	1.4 (1.2–1.6)	4.8 (4.1–5.4)	7.3 (5.2–9.5)
Total	20–39	2 (2009–2011)	357	2.80	1.3 (1.1–1.5)	0.32 (0.21–0.42)	1.3 (0.92–1.6)	4.6 (3.7–5.5)	F
Total	20–39	3 (2012–2013)	1040	7.88	1.1 (0.92–1.4)	0.29 (<LOD–0.39)	1.1 (0.81–1.3)	5.5 (3.9–7.0)	6.7 (5.1–8.3)
Total	40–59	1 (2007–2009)	1219	12.06	1.0 (0.96–1.1)	<LOD	1.2 (1.1–1.4)	4.4 (3.5–5.3)	6.6 (4.8–8.4)
Total	40–59	2 (2009–2011)	360	6.11	1.2 (0.97–1.5)	0.25[E] (<LOD–0.37)	1.2 (0.98–1.4)	4.3[E] (2.7–6.0)	6.7[E] (2.6–11)
Total	40–59	3 (2012–2013)	1075	9.86	1.1 (1.0–1.3)	0.30 (<LOD–0.36)	1.1 (0.94–1.2)	4.2 (3.1–5.3)	7.5[E] (4.3–11)
Total	60–79	1 (2007–2009)	1081	11.66	0.90 (0.81–0.99)	<LOD	0.99 (0.87–1.1)	3.7 (3.3–4.2)	5.2 (3.8–6.6)
Total	60–79	2 (2009–2011)	291	7.22	1.0 (0.84–1.3)	0.21[E] (<LOD–0.31)	0.99 (0.76–1.2)	4.4[E] (2.5–6.2)	6.3 (4.4–8.1)
Total	60–79	3 (2012–2013)	1038	10.31	0.88 (0.77–1.0)	<LOD	0.88 (0.76–1.0)	3.3 (2.8–3.7)	5.5 (4.2–6.7)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

b Data not available as participants under the age of 6 years were not included in cycle 1 (2007–2009).

E Use data with caution.

F Data is too unreliable to be published.

Bisphenol A (BPA) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–79	2 (2009–2011)	2550	5.04	1.2 (1.1–1.3)	0.39 (0.35–0.44)	1.0 (0.92–1.1)	4.1 (3.6–4.6)	6.9 (5.1–8.7)
Total	3–79	3 (2012 2013)	5667	7.80	1.1 (1.0–1.2)	0.40 (0.36–0.45)	0.99 (0.94–1.0)	3.6 (3.0–4.2)	5.9 (4.4–7.5)
Males	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Males	3–79	2 (2009–2011)	1277	4.84	1.1 (0.96–1.2)	0.36 (0.24–0.48)	0.99 (0.93–1.1)	3.7 (2.7–4.8)	6.2[E] (3.5–8.8)
Males	3–79	3 (2012 2013)	2826	6.97	1.1 (0.96–1.2)	0.38 (0.32–0.45)	0.98 (0.90–1.1)	3.1 (2.8–3.4)	5.1 (3.9–6.4)
Females	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Females	3–79	2 (2009–2011)	1273	5.24	1.3 (1.2–1.5)	0.48 (0.40–0.57)	1.1 (0.95–1.3)	4.5 (3.5–5.5)	6.9 (4.5–9.4)
Females	3–79	3 (2012 2013)	2841	8.61	1.2 (1.1–1.4)	0.42 (0.37–0.46)	1.0 (0.91–1.1)	4.0 (3.1–5.0)	7.1[E] (4.4–9.9)
Total	3–5[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–5	2 (2009–2011)	523	4.20	2.4 (1.9–3.1)	0.88[E] (0.54–1.2)	2.0 (1.8–2.3)	10[E] (4.6–15)	13 (8.6–17)
Total	3–5	3 (2012 2013)	520	5.76	2.3 (1.8–2.9)	0.86[E] (0.48–1.2)	2.1 (1.4–2.7)	5.9 (4.1–7.8)	8.4 (6.7–10)
Total	6–11	1 (2007–2009)	1028	6.79	2.0 (1.8–2.2)	0.68 (0.53–0.82)	2.0 (1.8–2.1)	5.8 (4.8–6.9)	9.8 (7.4–12)
Total	6–11	2 (2009–2011)	514	5.81	1.5 (1.2–1.9)	0.44[E] (0.20–0.68)	1.4 (1.1–1.7)	F	10[E] (3.0–18)
Total	6–11	3 (2012 2013)	1004	5.58	1.5 (1.3–1.7)	0.58 (0.46–0.69)	1.4 (1.1–1.6)	3.9 (2.6–5.2)	5.3[E] (2.0–8.6)
Total	12–19	1 (2007–2009)	978	6.22	1.3 (1.2–1.4)	0.40 (0.30–0.50)	1.2 (0.99–1.4)	4.2 (3.3–5.0)	6.4[E] (4.0–8.8)
Total	12–19	2 (2009–2011)	510	4.69	1.0 (0.83–1.2)	0.30[E] (<LOD–0.43)	0.94 (0.79–1.1)	3.4[E] (1.5–5.2)	5.0 (3.8–6.3)
Total	12–19	3 (2012 2013)	991	6.15	1.0 (0.85–1.2)	0.35 (0.25–0.44)	0.95 (0.82–1.1)	3.0 (2.3–3.8)	5.4[E] (2.6–8.2)
Total	20–39	1 (2007–2009)	1161	8.84	1.5 (1.4–1.6)	0.44 (0.33–0.55)	1.4 (1.2–1.6)	4.4 (3.4–5.4)	6.8 (5.9–7.7)
Total	20–39	2 (2009–2011)	355	2.80	1.1 (0.89–1.3)	0.39 (0.27–0.50)	0.99 (0.85–1.1)	2.8 (1.8–3.7)	F
Total	20–39	3 (2012 2013)	1040	7.88	1.0 (0.90–1.2)	0.36 (0.29–0.43)	0.93 (0.80–1.1)	3.3 (2.6–3.9)	5.4[E] (2.7–8.1)
Total	40–59	1 (2007–2009)	1214	12.06	1.3 (1.2–1.5)	0.36[E] (0.22–0.51)	1.2 (1.0–1.4)	4.7 (3.8–5.7)	7.5 (6.1–8.8)
Total	40–59	2 (2009–2011)	358	6.11	1.2 (0.99–1.4)	0.39 (0.27–0.50)	1.1 (0.86–1.3)	4.2[E] (2.3–6.2)	6.9[E] (3.4–10)
Total	40–59	3 (2012 2013)	1074	9.86	1.2 (1.1–1.3)	0.47 (0.42–0.52)	0.99 (0.90–1.1)	3.8 (2.9–4.6)	6.1[E] (3.7–8.5)
Total	60–79	1 (2007–2009)	1081	11.66	1.2 (1.1–1.4)	0.30 (0.21–0.39)	1.1 (0.94–1.3)	4.3 (3.0–5.6)	7.6 (5.4–9.8)
Total	60–79	2 (2009–2011)	290	7.22	1.2 (0.99–1.4)	0.29[E] (<LOD–0.45)	1.0 (0.89–1.1)	4.7 (3.3–6.0)	6.8[E] (2.9–11)
Total	60–79	3 (2012 2013)	1038	10.31	1.0 (0.97–1.1)	0.35 (0.30–0.41)	0.99 (0.94–1.0)	3.0 (2.7–3.4)	4.7[E] (2.7–6.7)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

b Data not available as participants under the age of 6 years were not included in cycle 1 (2007–2009).

E Use data with caution.

F Data is too unreliable to be published.

TRICLOSAN

Triclosan — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2550	28.20	16 (13–20)	<LOD	9.5[E] (5.8–13)	400 (280–520)	710 (540–880)
Total	3–79	3 (2012–2013)	5645	34.47	17 (15–19)	<LOD	9.9 (8.4–11)	350 (270–430)	720 (460–980)
Males	3–79	2 (2009–2011)	1274	26.77	18 (13–26)	<LOD	12[E] (5.3–18)	510 (330–690)	790[E] (350–1200)
Males	3–79	3 (2012–2013)	2815	34.03	17 (14–21)	<LOD	10 (7.4–13)	330[E] (180–480)	760[E] (380–1100)
Females	3–79	2 (2009–2011)	1276	29.62	14 (11–18)	<LOD	7.5[E] (3.1–12)	310[E] (140–470)	680[E] (410–960)
Females	3–79	3 (2012–2013)	2830	34.91	17 (13–22)	<LOD	9.6 (7.8–12)	390[E] (220–550)	700[E] (280–1100)
Total	3–5	2 (2009–2011)	523	29.45	8.9 (7.3–11)	<LOD	7.3 (4.9–9.6)	50 (40–61)	120[E] (68–160)
Total	3–5	3 (2012–2013)	518	36.29	9.5 (7.4–12)	<LOD	7.7[E] (<LOD–11)	78[E] (43–110)	110[E] (47–170)
Total	6–11	2 (2009–2011)	515	33.98	8.5 (6.7–11)	<LOD	3.8[E] (<LOD–5.9)	130[E] (54–210)	250[E] (82–410)
Total	6–11	3 (2012–2013)	1001	36.26	11 (8.4–16)	<LOD	7.2[E] (<LOD–10)	F	340[E] (190–500)
Total	12–19	2 (2009–2011)	510	19.02	20 (14–27)	<LOD	13[E] (7.7–18)	350[E] (230–480)	640[E] (400–870)
Total	12–19	3 (2012–2013)	984	28.35	19 (14–26)	<LOD	10 (7.2–13)	510[E] (220–800)	840 (580–1100)
Total	20–39	2 (2009–2011)	353	19.26	21[E] (13–32)	<LOD	17[E] (9.1–25)	470[E] (180–760)	910[E] (430–1400)
Total	20–39	3 (2012–2013)	1035	27.44	24 (18–30)	<LOD	15 (11–19)	420[E] (250–580)	F
Total	40–59	2 (2009–2011)	359	28.97	19[E] (12–29)	<LOD	12[E] (4.3–20)	470[E] (200–740)	740[E] (290–1200)
Total	40–59	3 (2012–2013)	1072	37.22	16 (12–22)	<LOD	8.9 (6.6–11)	380[E] (140–620)	910[E] (250–1600)
Total	60–79	2 (2009–2011)	290	41.72	–	<LOD	4.8[E] (<LOD–6.8)	360[E] (160–560)	590 (430–750)
Total	60–79	3 (2012–2013)	1035	41.84	–	<LOD	6.9 (6.0–7.7)	260[E] (140–380)	580[E] (270–890)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Triclosan (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2540	28.20	15 (11–19)	<LOD	9.1 (7.2–11)	370 (260–480)	610 (400–830)
Total	3–79	3 (2012–2013)	5642	34.47	17 (15–20)	<LOD	9.9 (9.2–11)	350 (310–390)	640 (510–770)
Males	3–79	2 (2009–2011)	1270	26.77	15 (10–21)	<LOD	8.8 (6.1–11)	390 (280–490)	700[E] (360–1000)
Males	3–79	3 (2012–2013)	2815	34.03	15 (12–18)	<LOD	8.7 (7.1–10)	310[E] (190–440)	470 (340–610)
Females	3–79	2 (2009–2011)	1270	29.62	15 (11–19)	<LOD	9.9 (7.9–12)	320[E] (150–480)	570[E] (340–800)
Females	3–79	3 (2012–2013)	2827	34.91	21 (16–27)	<LOD	11 (8.0–13)	390 (260–520)	810 (560–1100)
Total	3–5	2 (2009–2011)	522	29.45	14 (12–17)	<LOD	12 (8.8–16)	84 (58–110)	180 (140–230)
Total	3–5	3 (2012–2013)	517	36.29	18 (15–23)	<LOD	13 (8.8–17)	110[E] (47–180)	260 (170–350)
Total	6–11	2 (2009–2011)	513	33.98	8.5 (6.2–12)	<LOD	5.0[E] (<LOD–7.3)	150[E] (57–250)	270[E] (82–470)
Total	6–11	3 (2012–2013)	1001	36.26	14 (11–17)	<LOD	8.8 (7.0–11)	F	340[E] (160–530)
Total	12–19	2 (2009–2011)	508	19.02	14 (10–19)	<LOD	9.4[E] (5.5–13)	280[E] (150–420)	490[E] (280–710)
Total	12–19	3 (2012–2013)	983	28.35	14 (11–19)	<LOD	8.7 (7.0–11)	350[E] (160–540)	530 (380–680)
Total	20–39	2 (2009–2011)	351	19.26	17[E] (11–27)	<LOD	11[E] (6.9–15)	410[E] (220–600)	680[E] (290–1100)
Total	20–39	3 (2012–2013)	1035	27.44	22 (16–29)	<LOD	11 (7.6–15)	350 (270–430)	560[E] (320–810)
Total	40–59	2 (2009–2011)	357	28.97	17[E] (11–28)	<LOD	9.9[E] (<LOD–17)	410[E] (230–590)	820[E] (440–1200)
Total	40–59	3 (2012–2013)	1071	37.22	17 (13–22)	<LOD	9.4 (7.1–12)	400[E] (240–560)	900[E] (410–1400)
Total	60–79	2 (2009–2011)	289	41.72	–	<LOD	7.1 (5.0–9.2)	370[E] (200–550)	600[E] (280–910)
Total	60–79	3 (2012–2013)	1035	41.84	–	<LOD	9.5 (8.2–11)	340[E] (200–480)	720[E] (430–1000)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Results for Metals and Trace Elements

ARSENIC

Arsenate

Arsenate — Geometric means and selected percentiles of urine concentrations (µg As/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2538	99.49	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2536	99.25	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1271	99.37	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1251	99.04	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1267	99.61	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1285	99.46	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	516	98.84	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	500	98.60	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	511	99.61	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	507	99.61	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	510	99.41	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	510	98.82	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	355	99.44	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	355	99.72	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	357	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	312	99.04	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	289	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	352	100	–	<LOD	<LOD	<LOD	<LOD

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

Arsenate (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg As/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th[b] (95% CI)	50th[b] (95% CI)	90th[b] (95% CI)	95th[b] (95% CI)
Total	3–79	2 (2009–2011)	2528	99.49	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2535	99.25	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1267	99.37	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1251	99.04	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1261	99.61	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1284	99.46	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	515	98.84	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	499	98.60	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	509	99.61	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	507	99.61	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	508	99.41	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	510	98.82	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	353	99.44	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	355	99.72	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	355	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	312	99.04	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	288	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	352	100	–	<LOD	<LOD	<LOD	<LOD

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

Arsenite

Arsenite — Geometric means and selected percentiles of urine concentrations (µg As/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2537	75.60	–	<LOD	<LOD	1.7 (1.1–2.3)	2.7[E] (1.3–4.0)
Total	3–79	3 (2012–2013)	2535	73.96	–	<LOD	<LOD	1.7[E] (0.92–2.5)	F
Males	3–79	2 (2009–2011)	1271	72.54	–	<LOD	<LOD	1.7 (1.1–2.3)	2.8[E] (0.88–4.7)
Males	3–79	3 (2012–2013)	1250	71.20	–	<LOD	<LOD	1.4 (1.0–1.8)	F
Females	3–79	2 (2009–2011)	1266	78.67	–	<LOD	<LOD	1.5[E] (0.72–2.3)	2.4[E] (1.1–3.7)
Females	3–79	3 (2012–2013)	1285	76.65	–	<LOD	<LOD	F	F
Total	3–5	2 (2009–2011)	516	84.50	–	<LOD	<LOD	0.79[E] (<LOD–1.2)	1.3[E] (0.74–1.9)
Total	3–5	3 (2012–2013)	500	81.80	–	<LOD	<LOD	0.94 (<LOD–1.2)	1.9[E] (0.75–3.0)
Total	6–11	2 (2009–2011)	511	78.86	–	<LOD	<LOD	1.0[E] (<LOD–1.4)	1.8[E] (1.1–2.4)
Total	6–11	3 (2012–2013)	506	76.09	–	<LOD	<LOD	1.1 (0.81–1.4)	1.6[E] (0.82–2.5)
Total	12–19	2 (2009–2011)	510	72.35	–	<LOD	<LOD	1.9[E] (1.2–2.7)	F
Total	12–19	3 (2012–2013)	510	68.43	–	<LOD	<LOD	1.5[E] (<LOD–2.3)	2.6[E] (1.1–4.0)
Total	20–39	2 (2009–2011)	355	69.86	–	<LOD	<LOD	1.9[E] (<LOD–3.1)	F
Total	20–39	3 (2012–2013)	355	70.70	–	<LOD	<LOD	F	F
Total	40–59	2 (2009–2011)	356	70.51	–	<LOD	<LOD	1.3[E] (0.75–1.8)	2.0[E] (1.0–2.9)
Total	40–59	3 (2012–2013)	312	70.19	–	<LOD	<LOD	F	F
Total	60–79	2 (2009–2011)	289	73.01	–	<LOD	<LOD	1.9[E] (1.1–2.7)	F
Total	60–79	3 (2012–2013)	352	74.43	–	<LOD	<LOD	1.8 (1.1–2.4)	3.2[E] (1.3–5.2)

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Arsenite (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg As/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2527	75.60	–	<LOD	<LOD	2.0 (1.6–2.3)	2.9 (1.9–3.9)
Total	3–79	3 (2012–2013)	2534	73.96	–	<LOD	<LOD	1.9[E] (1.2–2.7)	F
Males	3–79	2 (2009–2011)	1267	72.54	–	<LOD	<LOD	1.4[E] (0.85–1.9)	F
Males	3–79	3 (2012–2013)	1250	71.20	–	<LOD	<LOD	1.2 (0.94–1.5)	F
Females	3–79	2 (2009–2011)	1260	78.67	–	<LOD	<LOD	2.2 (1.6–2.8)	3.0 (2.1–3.9)
Females	3–79	3 (2012–2013)	1284	76.65	–	<LOD	<LOD	2.4[E] (0.86–3.9)	F
Total	3–5	2 (2009–2011)	515	84.50	–	<LOD	<LOD	1.9 (1.7–2.2)	2.9 (1.9–3.9)
Total	3–5	3 (2012–2013)	499	81.80	–	<LOD	<LOD	2.5[E] (1.3–3.7)	4.3[E] (2.6–6.1)
Total	6–11	2 (2009–2011)	509	78.86	–	<LOD	<LOD	1.6[E] (1.0–2.2)	2.2[E] (1.2–3.1)
Total	6–11	3 (2012–2013)	506	76.09	–	<LOD	<LOD	1.7 (1.1–2.2)	2.5[E] (1.3–3.6)
Total	12–19	2 (2009–2011)	508	72.35	–	<LOD	<LOD	1.4[E] (0.85–2.0)	2.9[E] (1.4–4.5)
Total	12–19	3 (2012–2013)	510	68.43	–	<LOD	<LOD	1.4[E] (<LOD–2.0)	1.9[E] (1.0–2.8)
Total	20–39	2 (2009–2011)	353	69.86	–	<LOD	<LOD	1.9[E] (0.89–3.0)	2.6[E] (0.86–4.3)
Total	20–39	3 (2012–2013)	355	70.70	–	<LOD	<LOD	F	F
Total	40–59	2 (2009–2011)	354	70.51	–	<LOD	<LOD	1.9 (1.3–2.6)	2.0[E] (1.2–2.8)
Total	40–59	3 (2012–2013)	312	70.19	–	<LOD	<LOD	F	F
Total	60–79	2 (2009–2011)	288	73.01	–	<LOD	<LOD	2.3[E] (1.2–3.3)	F
Total	60–79	3 (2012–2013)	352	74.43	–	<LOD	<LOD	2.3[E] (0.79–3.8)	3.7[E] (1.7–5.6)

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Arsenocholine

Arsenocholine — Geometric means and selected percentiles of urine concentrations (µg As/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	3 (2012–2013)	2536	100	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1251	100	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1285	100	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	500	100	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	507	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	510	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	355	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	312	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	352	100	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

Arsenocholine (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg As/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	3 (2012–2013)	2535	100	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1251	100	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1284	100	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	499	100	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	507	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	510	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	355	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	312	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	352	100	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

Arsenocholine and Arsenobetaine

Arsenocholine and arsenobetaine — Geometric means and selected percentiles of urine concentrations (µg As/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2538	48.50	–	<LOD	1.4[E] (<LOD–2.2)	28[E] (18–39)	48[E] (30–67)
Total	3–79	3 (2012–2013)	2536	48.15	–	<LOD	1.4[E] (<LOD–2.1)	24[E] (11–36)	56 (37–75)
Males	3–79	2 (2009–2011)	1271	46.34	–	<LOD	1.5[E] (<LOD–2.5)	29[E] (14–43)	F
Males	3–79	3 (2012–2013)	1251	47.40	–	<LOD	1.4[E] (<LOD–2.0)	21[E] (13–29)	38 (25–51)
Females	3–79	2 (2009–2011)	1267	50.67	–	<LOD	F	28[E] (15–41)	49[E] (29–69)
Females	3–79	3 (2012–2013)	1285	48.87	–	<LOD	1.5[E] (<LOD–2.6)	F	58[E] (33–83)
Total	3–5	2 (2009–2011)	516	59.69	–	<LOD	<LOD	F	34[E] (19–49)
Total	3–5	3 (2012–2013)	500	57.40	–	<LOD	<LOD	12[E] (6.3–17)	F
Total	6–11	2 (2009–2011)	511	58.12	–	<LOD	<LOD	F	F
Total	6–11	3 (2012–2013)	507	59.57	–	<LOD	<LOD	F	27[E] (14–39)
Total	12–19	2 (2009–2011)	510	57.65	–	<LOD	<LOD	12[E] (4.5–19)	38[E] (16–59)
Total	12–19	3 (2012–2013)	510	51.18	–	<LOD	<LOD	16[E] (7.2–24)	37[E] (17–56)
Total	20–39	2 (2009–2011)	355	38.59	2.3[E] (1.5–3.6)	<LOD	F	33[E] (15–52)	68[E] (20–110)
Total	20–39	3 (2012–2013)	355	44.51	–	<LOD	F	19[E] (11–28)	35[E] (12–58)
Total	40–59	2 (2009–2011)	357	30.81	1.8 (1.4–2.4)	<LOD	1.4[E] (<LOD–2.5)	F	35[E] (19–52)
Total	40–59	3 (2012–2013)	312	34.29	2.2[E] (1.3–3.8)	<LOD	F	F	57[E] (30–84)
Total	60–79	2 (2009–2011)	289	29.41	3.6[E] (2.2–5.9)	<LOD	3.6[E] (1.4–5.8)	40[E] (21–59)	74[E] (33–120)
Total	60–79	3 (2012–2013)	352	30.11	2.6[E] (1.8–3.8)	<LOD	2.1[E] (0.86–3.4)	F	67[E] (29–100)

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Arsenocholine and arsenobetaine (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg As/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2528	48.50	–	<LOD	1.5[E] (<LOD–2.5)	22 (16–28)	44[E] (18–71)
Total	3–79	3 (2012–2013)	2535	48.15	–	<LOD	1.6 (1.1–2.1)	25[E] (12–39)	44[E] (24–63)
Males	3–79	2 (2009–2011)	1267	46.34	–	<LOD	F	18[E] (9.4–27)	F
Males	3–79	3 (2012–2013)	1251	47.40	–	<LOD	1.2 (0.77–1.6)	16[E] (7.3–24)	34 (25–43)
Females	3–79	2 (2009–2011)	1261	50.67	–	<LOD	<LOD	25 (19–32)	61[E] (20–100)
Females	3–79	3 (2012–2013)	1284	48.87	–	<LOD	2.1[E] (0.84–3.3)	33[E] (9.5–56)	F
Total	3–5	2 (2009–2011)	515	59.69	–	<LOD	<LOD	F	F
Total	3–5	3 (2012–2013)	499	57.40	–	<LOD	<LOD	21[E] (11–31)	F
Total	6–11	2 (2009–2011)	509	58.12	–	<LOD	<LOD	F	F
Total	6–11	3 (2012–2013)	507	59.57	–	<LOD	<LOD	F	40[E] (12–69)
Total	12–19	2 (2009–2011)	508	57.65	–	<LOD	<LOD	9.3[E] (4.0–15)	24[E] (10–38)
Total	12–19	3 (2012–2013)	510	51.18	–	<LOD	<LOD	10[E] (3.8–17)	F
Total	20–39	2 (2009–2011)	353	38.59	1.9[E] (1.2–2.8)	<LOD	F	22[E] (7.8–37)	F
Total	20–39	3 (2012–2013)	355	44.51	–	<LOD	1.4[E] (0.88–1.9)	12[E] (5.5–19)	21[E] (9.8–32)
Total	40–59	2 (2009–2011)	355	30.81	1.8 (1.3–2.5)	<LOD	1.9[E] (<LOD–3.1)	17[E] (10–24)	24[E] (9.8–39)
Total	40–59	3 (2012–2013)	312	34.29	2.6[E] (1.6–4.4)	<LOD	F	33[E] (14–52)	F
Total	60–79	2 (2009–2011)	288	29.41	4.2[E] (2.6–6.8)	<LOD	4.6[E] (1.7–7.5)	47[E] (13–80)	84[E] (43–120)
Total	60–79	3 (2012–2013)	352	30.11	2.9[E] (1.9–4.4)	<LOD	F	35[E] (13–57)	F

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Dimethylarsinic Acid

Dimethylarsinic acid (DMA) — Geometric means and selected percentiles of urine concentrations (µg As/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2538	3.78	3.5 (3.0–4.0)	0.93 (0.89–0.97)	3.6 (3.1–4.1)	11 (8.3–13)	16[E] (6.6–25)
Total	3–79	3 (2012–2013)	2536	3.86	3.6 (3.2–4.0)	1.1 (0.89–1.4)	3.4 (3.0–3.8)	11 (7.8–13)	16[E] (7.4–25)
Males	3–79	2 (2009–2011)	1271	3.15	3.6 (3.1–4.3)	0.95 (<LOD–1.3)	3.7 (2.8–4.5)	11 (7.9–14)	16[E] (7.7–24)
Males	3–79	3 (2012–2013)	1251	2.96	3.8 (3.3–4.4)	1.3[E] (0.75–1.8)	3.8 (3.3–4.3)	9.8 (7.8–12)	14[E] (4.8–23)
Females	3–79	2 (2009–2011)	1267	4.42	3.3 (2.8–3.9)	0.92 (0.75–1.1)	3.5 (3.0–3.9)	11 (7.5–14)	18[E] (7.3–29)
Females	3–79	3 (2012–2013)	1285	4.75	3.4 (2.9–4.1)	1.0 (0.85–1.2)	3.1 (2.7–3.5)	12 (8.4–16)	F
Total	3–5	2 (2009–2011)	516	3.68	3.6 (3.1–4.3)	1.4[E] (0.89–1.9)	3.5 (3.0–4.0)	9.4 (6.9–12)	13[E] (8.5–18)
Total	3–5	3 (2012–2013)	500	3.00	3.3 (3.0–3.8)	1.1 (0.83–1.4)	3.4 (2.8–3.9)	10 (7.9–12)	16[E] (9.9–21)
Total	6–11	2 (2009–2011)	511	2.74	3.9 (3.5–4.4)	1.5 (1.0–1.9)	4.1 (3.5–4.7)	9.8 (8.4–11)	14[E] (7.7–20)
Total	6–11	3 (2012–2013)	507	2.76	3.6 (3.1–4.1)	1.1[E] (<LOD–1.6)	3.7 (3.0–4.4)	9.1 (6.6–12)	14[E] (6.9–22)
Total	12–19	2 (2009–2011)	510	2.75	3.6 (2.9–4.6)	0.94[E] (<LOD–1.5)	3.5 (2.5–4.4)	11 (7.5–14)	17[E] (9.3–25)
Total	12–19	3 (2012–2013)	510	3.53	3.6 (3.0–4.3)	1.3 (0.88–1.7)	3.4 (2.6–4.2)	9.9 (6.6–13)	F
Total	20–39	2 (2009–2011)	355	5.63	3.6 (2.9–4.5)	0.92 (0.72–1.1)	3.9 (3.0–4.8)	F	22[E] (11–33)
Total	20–39	3 (2012–2013)	355	4.79	3.8 (3.3–4.5)	1.2[E] (<LOD–1.9)	3.5 (2.9–4.1)	12[E] (4.4–20)	24[E] (8.5–40)
Total	40–59	2 (2009–2011)	357	5.32	3.2 (2.6–3.8)	0.91[E] (<LOD–1.2)	3.1 (2.5–3.8)	9.0 (7.4–11)	12 (8.8–15)
Total	40–59	3 (2012–2013)	312	6.09	3.5 (2.8–4.4)	1.1 (0.77–1.5)	3.4 (2.7–4.1)	12[E] (6.0–17)	F
Total	60–79	2 (2009–2011)	289	3.46	3.6 (2.8–4.5)	0.92 (0.82–1.0)	3.6 (2.9–4.3)	13[E] (5.8–20)	21[E] (6.5–35)
Total	60–79	3 (2012–2013)	352	4.26	3.5 (3.0–4.2)	1.0 (0.86–1.2)	3.4 (2.6–4.2)	10 (7.4–13)	18[E] (10–26)

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Dimethylarsinic acid (DMA) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg As/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2528	3.78	3.5 (3.0 - 4.0)	1.4 (1.2 - 1.6)	3.0 (2.6 - 3.4)	9.5 (7.1 - 12)	15[E] (9.1 - 21)
Total	3–79	3 (2012 2013)	2535	3.86	3.7 (3.2 - 4.3)	1.4 (1.3 - 1.5)	3.4 (3.0 - 3.8)	11[E] (5.6 - 16)	20[E] (11 - 30)
Males	3–79	2 (2009–2011)	1267	3.15	3.1 (2.7 - 3.6)	1.3 (1.0 - 1.5)	2.9 (2.5 - 3.3)	7.7 (5.3 - 10)	10[E] (4.4 - 16)
Males	3–79	3 (2012 2013)	1251	2.96	3.1 (2.8 - 3.6)	1.3 (1.1 - 1.4)	3.0 (2.4 - 3.5)	7.2 (5.4 - 9.1)	13[E] (7.1 - 19)
Females	3–79	2 (2009–2011)	1261	4.42	3.9 (3.3 - 4.5)	1.6 (1.3 - 1.8)	3.3 (2.8 - 3.9)	11[E] (5.9 - 16)	18[E] (11 - 24)
Females	3–79	3 (2012 2013)	1284	4.75	4.3 (3.6 - 5.3)	1.5 (1.3 - 1.7)	3.8 (3.1 - 4.4)	15[E] (5.2 - 25)	24[E] (15 - 33)
Total	3–5	2 (2009–2011)	515	3.68	6.4 (5.6 - 7.3)	3.0 (2.7 - 3.3)	5.6 (4.7 - 6.5)	16 (11 - 20)	23[E] (10 - 36)
Total	3–5	3 (2012 2013)	499	3.00	6.5 (5.9 - 7.1)	2.8 (2.1 - 3.4)	6.1 (5.5 - 6.8)	14 (11 - 17)	24[E] (13 - 36)
Total	6–11	2 (2009–2011)	509	2.74	4.5 (4.1 - 5.0)	2.1 (1.9 - 2.3)	4.2 (3.8 - 4.7)	11 (7.9 - 13)	17[E] (10 - 24)
Total	6–11	3 (2012 2013)	507	2.76	4.5 (3.9 - 5.2)	2.2 (1.9 - 2.4)	4.1 (3.7 - 4.4)	9.9 (6.7 - 13)	14[E] (7.2 - 21)
Total	12–19	2 (2009–2011)	508	2.75	2.8 (2.3 - 3.5)	1.1 (0.76 - 1.4)	2.4 (1.9 - 3.0)	8.5[E] (4.5 - 13)	13[E] (7.6 - 19)
Total	12–19	3 (2012 2013)	510	3.53	2.7 (2.2 - 3.4)	1.2 (1.1 - 1.4)	2.3 (1.7 - 2.9)	7.4[E] (2.9 - 12)	12[E] (5.9 - 17)
Total	20–39	2 (2009–2011)	353	5.63	3.1 (2.5 - 3.9)	1.3 (0.97 - 1.6)	2.6 (1.9 - 3.3)	9.1[E] (5.8 - 12)	14[E] (7.2 - 21)
Total	20–39	3 (2012 2013)	355	4.79	2.9 (2.6 - 3.3)	1.1[E] (<LOD - 1.6)	2.7 (2.3 - 3.0)	F	17[E] (4.7 - 29)
Total	40–59	2 (2009–2011)	355	5.32	3.3 (2.9 - 3.7)	1.6 (1.3 - 1.8)	3.0 (2.7 - 3.2)	7.7 (5.5 - 9.9)	11[E] (6.1 - 15)
Total	40–59	3 (2012 2013)	312	6.09	4.1 (3.3 - 5.2)	1.5 (1.2 - 1.7)	3.8 (3.1 - 4.5)	F	24[E] (7.1 - 40)
Total	60–79	2 (2009–2011)	288	3.46	4.2 (3.4 - 5.3)	1.5[E] (0.88 - 2.1)	4.1 (3.1 - 5.0)	F	F
Total	60–79	3 (2012 2013)	352	4.26	4.0 (3.2 - 4.9)	1.5 (1.2 - 1.9)	3.6 (2.9 - 4.3)	11[E] (4.6 - 18)	20[E] (10 - 30)

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Monomethylarsonic Acid

Monomethylarsonic acid (MMA) — Geometric means and selected percentiles of urine concentrations (µg As/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2538	73.01	–	<LOD	<LOD	0.97 (0.94–0.99)	1.1[E] (<LOD–1.5)
Total	3–79	3 (2012–2013)	2536	71.53	–	<LOD	<LOD	1.2 (1.1–1.4)	1.5 (1.3–1.7)
Males	3–79	2 (2009–2011)	1271	69.63	–	<LOD	<LOD	0.98 (0.81–1.2)	1.5[E] (0.88–2.1)
Males	3–79	3 (2012–2013)	1251	68.35	–	<LOD	<LOD	1.2 (1.0–1.4)	1.5 (1.3–1.7)
Females	3–79	2 (2009–2011)	1267	76.40	–	<LOD	<LOD	0.95 (0.90–1.0)	0.99 (0.88–1.1)
Females	3–79	3 (2012–2013)	1285	74.63	–	<LOD	<LOD	1.2 (0.88–1.5)	1.5 (1.3–1.8)
Total	3–5	2 (2009–2011)	516	77.91	–	<LOD	<LOD	0.92 (0.84–1.0)	0.98 (0.96–1.0)
Total	3–5	3 (2012–2013)	500	79.20	–	<LOD	<LOD	0.91 (<LOD–1.2)	1.5 (1.1–1.9)
Total	6–11	2 (2009–2011)	511	76.52	–	<LOD	<LOD	0.93 (0.83–1.0)	1.2 (0.77–1.6)
Total	6–11	3 (2012–2013)	507	72.58	–	<LOD	<LOD	1.0 (0.84–1.2)	1.3 (1.1–1.4)
Total	12–19	2 (2009–2011)	510	62.94	–	<LOD	<LOD	0.99 (0.80–1.2)	1.5[E] (0.93–2.1)
Total	12–19	3 (2012–2013)	510	62.16	–	<LOD	<LOD	1.3 (1.1–1.6)	1.6 (1.3–1.8)
Total	20–39	2 (2009–2011)	355	70.14	–	<LOD	<LOD	0.98 (0.86–1.1)	1.3[E] (<LOD–2.0)
Total	20–39	3 (2012–2013)	355	66.48	–	<LOD	<LOD	1.3 (1.0–1.5)	1.5 (1.3–1.7)
Total	40–59	2 (2009–2011)	357	71.43	–	<LOD	<LOD	0.96 (0.92–1.0)	1.0[E] (<LOD–1.6)
Total	40–59	3 (2012–2013)	312	72.76	–	<LOD	<LOD	1.1 (0.84–1.4)	1.6 (1.1–2.2)
Total	60–79	2 (2009–2011)	289	81.31	–	<LOD	<LOD	0.93 (0.81–1.0)	0.99[E] (<LOD–1.4)
Total	60–79	3 (2012–2013)	352	76.70	–	<LOD	<LOD	1.1 (0.79–1.5)	1.4 (1.2–1.6)

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

Monomethylarsonic acid (MMA) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg As/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011)[a] and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2528	73.01	–	<LOD	<LOD	1.0 (0.79 – 1.2)	1.6 (1.3 – 1.9)
Total	3–79	3 (2012–2013)	2535	71.53	–	<LOD	<LOD	1.2 (1.1 – 1.4)	1.7 (1.5 – 1.9)
Males	3–79	2 (2009–2011)	1267	69.63	–	<LOD	<LOD	0.96 (0.92 – 0.99)	1.2[E] (0.70 – 1.7)
Males	3–79	3 (2012–2013)	1251	68.35	–	<LOD	<LOD	1.0 (0.87 – 1.1)	1.3 (1.0 – 1.6)
Females	3–79	2 (2009–2011)	1261	76.40	–	<LOD	<LOD	1.3 (0.95 – 1.7)	1.8 (1.3 – 2.3)
Females	3–79	3 (2012–2013)	1284	74.63	–	<LOD	<LOD	1.6 (1.3 – 1.9)	2.1 (1.8 – 2.5)
Total	3–5	2 (2009–2011)	515	77.91	–	<LOD	<LOD	1.5 (1.2 – 1.8)	2.2 (1.6 – 2.8)
Total	3–5	3 (2012–2013)	499	79.20	–	<LOD	<LOD	2.0 (1.5 – 2.5)	3.0 (2.0 – 4.0)
Total	6–11	2 (2009–2011)	509	76.52	–	<LOD	<LOD	0.99 (0.87 – 1.1)	1.5 (1.2 – 1.9)
Total	6–11	3 (2012–2013)	507	72.58	–	<LOD	<LOD	1.3 (1.1 – 1.5)	1.8 (1.5 – 2.0)
Total	12–19	2 (2009–2011)	508	62.94	–	<LOD	<LOD	0.93 (0.83 – 1.0)	0.99[E] (<LOD – 1.5)
Total	12–19	3 (2012–2013)	510	62.16	–	<LOD	<LOD	0.99 (0.75 – 1.2)	1.5 (1.0 – 2.0)
Total	20–39	2 (2009–2011)	353	70.14	–	<LOD	<LOD	0.98[E] (<LOD – 1.5)	1.6[E] (<LOD – 2.5)
Total	20–39	3 (2012–2013)	355	66.48	–	<LOD	<LOD	0.97 (<LOD – 1.2)	1.3 (0.87 – 1.8)
Total	40–59	2 (2009–2011)	355	71.43	–	<LOD	<LOD	0.99 (0.76 – 1.2)	1.5 (1.0 – 2.0)
Total	40–59	3 (2012–2013)	312	72.76	–	<LOD	<LOD	1.3 (0.92 – 1.6)	1.7 (1.3 – 2.0)
Total	60–79	2 (2009–2011)	288	81.31	–	<LOD	<LOD	1.4 (0.95 – 1.9)	1.8 (1.5 – 2.1)
Total	60–79	3 (2012–2013)	352	76.70	–	<LOD	<LOD	1.4[E] (0.87 – 1.9)	2.1[E] (1.3 – 2.9)

a In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g., µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

CADMIUM

Cadmium — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 6–79 years[a], Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	6–79	1 (2007–2009)	5319	2.91	0.34 (0.31–0.37)	0.091 (0.087–0.094)	0.27 (0.25–0.29)	2.4 (2.0–2.8)	3.6 (3.1–4.1)
Total	6–79	2 (2009–2011)	5575	4.27	0.30 (0.27–0.33)	0.089 (0.080–0.097)	0.27 (0.25–0.30)	1.7 (1.4–2.1)	2.6 (2.2–3.1)
Total	6–79	3 (2012–2013)	5067	8.51	0.34 (0.31–0.37)	0.10 (0.098–0.10)	0.28 (0.26–0.30)	2.1 (1.5–2.7)	3.4 (2.5–4.3)
Males	6–79	1 (2007–2009)	2576	3.34	0.30 (0.27–0.34)	0.084 (0.073–0.095)	0.22 (0.20–0.25)	2.3 (1.8–2.8)	3.4 (2.8–4.0)
Males	6–79	2 (2009–2011)	2687	4.84	0.27 (0.25–0.30)	0.084 (0.074–0.093)	0.24 (0.21–0.27)	1.7 (1.5–2.0)	2.5 (2.0–3.0)
Males	6–79	3 (2012–2013)	2540	9.53	0.31 (0.28–0.34)	0.099 (0.085–0.11)	0.23 (0.20–0.26)	2.1 (1.5–2.7)	3.5 (2.6–4.3)
Females	6–79	1 (2007–2009)	2743	2.52	0.38 (0.35–0.41)	0.093 (0.091–0.095)	0.32 (0.29–0.36)	2.5 (2.0–2.9)	3.7 (3.1–4.3)
Females	6–79	2 (2009–2011)	2888	3.74	0.33 (0.29–0.38)	0.091 (0.086–0.095)	0.31 (0.27–0.34)	1.6[E] (0.94–2.2)	2.7 (2.1–3.4)
Females	6–79	3 (2012–2013)	2527	7.48	0.39 (0.34–0.44)	0.10 (0.10–0.11)	0.33 (0.29–0.38)	1.8[E] (0.71–2.9)	3.4[E] (1.7–5.1)

a For the purpose of total population comparisons, only values from participants aged 6–79 years were included as participants under the age of 6 years were not included in cycle 1 (2007–2009).

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

Cadmium — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–79	2 (2009–2011)	6070	5.16	0.29 (0.26–0.32)	0.083 (0.074–0.093)	0.26 (0.24–0.29)	1.7 (1.3–2.0)	2.6 (2.1–3.0)
Total	3–79	3 (2012–2013)	5538	11.48	0.33 (0.30–0.36)	0.099 (0.092–0.11)	0.27 (0.25–0.29)	2.0 (1.4–2.6)	3.4 (2.5–4.3)
Males	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Males	3–79	2 (2009–2011)	2940	5.78	0.26 (0.24–0.29)	0.079 (0.070–0.089)	0.23 (0.20–0.26)	1.7 (1.5–2.0)	2.4 (2.0–2.9)
Males	3–79	3 (2012–2013)	2769	12.35	0.29 (0.27–0.32)	0.089 (<LOD–0.10)	0.22 (0.19–0.25)	2.1 (1.5–2.7)	3.3 (2.5–4.2)
Females	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Females	3–79	2 (2009–2011)	3130	4.57	0.32 (0.28–0.36)	0.089 (0.080–0.098)	0.30 (0.27–0.33)	1.5[E] (0.92–2.1)	2.7 (2.1–3.4)
Females	3–79	3 (2012–2013)	2769	10.62	0.37 (0.33–0.41)	0.10 (0.099–0.10)	0.32 (0.28–0.37)	1.7[E] (0.62–2.8)	3.4[E] (1.8–5.0)
Total	3–5[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–5	2 (2009–2011)	495	15.15	0.073 (0.065–0.081)	<LOD	0.078 (0.069–0.087)	0.099 (0.098–0.10)	F
Total	3–5	3 (2012–2013)	471	43.52	–	<LOD	0.091 (<LOD–0.11)	0.16 (0.11–0.20)	0.18[E] (<LOD–0.29)
Total	6–11	1 (2007–2009)	910	9.12	0.091 (0.082–0.10)	<LOD[E] (<LOD–0.053)	0.092 (0.090–0.094)	0.20 (0.18–0.21)	0.22 (0.19–0.26)
Total	6–11	2 (2009–2011)	961	14.05	0.083 (0.076–0.090)	<LOD	0.090 (0.087–0.094)	0.17[E] (0.088–0.25)	0.20 (0.18–0.23)
Total	6–11	3 (2012–2013)	944	27.44	0.095 (0.085–0.11)	<LOD	0.10 (0.099–0.10)	0.18 (0.16–0.20)	0.21 (0.18–0.24)
Total	12–19	1 (2007–2009)	945	3.92	0.16 (0.13–0.20)	0.066 (0.045–0.086)	F	F	F
Total	12–19	2 (2009–2011)	997	5.72	0.13 (0.12–0.15)	0.062 (0.040–0.084)	0.096 (0.095–0.097)	0.48[E] (0.27–0.70)	0.82[E] (0.45–1.2)
Total	12–19	3 (2012–2013)	977	12.49	0.17 (0.15–0.20)	<LOD	0.12[E] (<LOD–0.17)	0.82[E] (0.31–1.3)	1.7[E] (0.91–2.4)
Total	20–39	1 (2007–2009)	1165	1.55	0.34 (0.30–0.38)	0.091 (0.084–0.098)	0.24 (0.21–0.27)	2.6 (2.0–3.1)	3.4 (3.1–3.7)
Total	20–39	2 (2009–2011)	1313	2.21	0.28 (0.24–0.34)	0.090 (0.066–0.11)	0.24 (0.20–0.29)	1.7[E] (1.0–2.3)	2.7 (2.1–3.2)
Total	20–39	3 (2012–2013)	1032	3.68	0.31 (0.24–0.41)	0.10 (0.084–0.12)	0.25 (0.20–0.29)	2.0[E] (0.71–3.3)	F
Total	40–59	1 (2007–2009)	1220	0.90	0.48 (0.43–0.54)	0.098[E] (0.054–0.14)	0.36 (0.32–0.41)	3.1 (2.3–3.9)	4.2 (3.7–4.7)
Total	40–59	2 (2009–2011)	1222	0.98	0.41 (0.37–0.46)	0.095 (0.090–0.10)	0.34 (0.31–0.37)	2.2 (1.5–2.8)	3.1 (2.3–3.8)
Total	40–59	3 (2012–2013)	1071	1.12	0.50 (0.43–0.57)	0.11 (0.084–0.13)	0.39 (0.30–0.48)	3.0 (2.3–3.7)	4.6 (3.7–5.5)
Total	60–79	1 (2007–2009)	1079	0.56	0.45 (0.42–0.49)	0.19 (0.18–0.20)	0.39 (0.37–0.41)	1.7 (1.2–2.2)	2.7 (2.2–3.2)
Total	60–79	2 (2009–2011)	1082	0.46	0.45 (0.41–0.50)	0.18 (0.13–0.23)	0.40 (0.35–0.44)	1.6 (1.3–2.0)	2.4 (1.9–2.8)
Total	60–79	3 (2012–2013)	1043	0	0.48 (0.43–0.54)	0.19 (0.17–0.20)	0.41 (0.35–0.46)	1.5 (1.3–1.8)	2.6 (1.9–3.3)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

b Data not available as participants under the age of 6 years were not included in cycle 1 (2007–2009).

E Use data with caution.

F Data is too unreliable to be published.

FLUORIDE

Fluoride — Geometric means and selected percentiles of urine concentrations (mg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2530	0	0.50 (0.46–0.55)	0.19 (0.17–0.22)	0.48 (0.44–0.53)	1.2 (1.0–1.3)	1.5 (1.2–1.7)
Total	3–79	3 (2012–2013)	2671	0	0.43 (0.39–0.48)	0.15 (0.14–0.17)	0.44 (0.39–0.49)	1.1 (0.97–1.3)	1.4 (0.99–1.7)
Males	3–79	2 (2009–2011)	1267	0	0.53 (0.47–0.60)	0.23 (0.20–0.25)	0.51 (0.42–0.60)	1.3 (1.0–1.5)	1.6 (1.4–1.9)
Males	3–79	3 (2012–2013)	1320	0	0.44 (0.39–0.49)	0.16 (0.13–0.19)	0.44 (0.39–0.49)	1.1 (0.92–1.3)	1.3[E] (0.81–1.8)
Females	3–79	2 (2009–2011)	1263	0	0.47 (0.43–0.52)	0.17 (0.15–0.20)	0.47 (0.41–0.53)	1.1 (0.92–1.3)	1.3 (1.0–1.6)
Females	3–79	3 (2012–2013)	1351	0	0.43 (0.38–0.48)	0.14 (0.11–0.16)	0.45 (0.37–0.53)	1.1 (0.92–1.4)	1.4 (1.0–1.8)
Total	3–5	2 (2009–2011)	510	0	0.47 (0.42–0.52)	0.18 (0.13–0.23)	0.51 (0.44–0.58)	0.99 (0.88–1.1)	1.3 (0.92–1.7)
Total	3–5	3 (2012–2013)	493	0	0.39 (0.32–0.46)	0.13 (0.098–0.17)	0.37 (0.25–0.50)	0.99 (0.77–1.2)	1.2 (0.97–1.5)
Total	6–11	2 (2009–2011)	514	0	0.50 (0.44–0.57)	0.20 (0.17–0.24)	0.49 (0.42–0.55)	1.1 (0.90–1.3)	1.5 (1.1–1.8)
Total	6–11	3 (2012–2013)	549	0	0.40 (0.36–0.45)	0.18 (0.15–0.20)	0.38 (0.35–0.41)	0.85 (0.61–1.1)	1.1 (0.88–1.4)
Total	12–19	2 (2009–2011)	507	0	0.41 (0.37–0.46)	0.17 (0.15–0.19)	0.44 (0.36–0.52)	0.94 (0.82–1.1)	1.2 (0.98–1.3)
Total	12–19	3 (2012–2013)	549	0	0.39 (0.35–0.44)	0.16 (0.13–0.20)	0.37 (0.33–0.41)	0.93 (0.71–1.2)	1.1 (0.85–1.3)
Total	20–39	2 (2009–2011)	354	0	0.53 (0.47–0.59)	0.23 (0.19–0.27)	0.50 (0.38–0.62)	1.2 (0.96–1.5)	1.4 (1.1–1.8)
Total	20–39	3 (2012–2013)	371	0	0.43 (0.35–0.53)	0.15 (0.11–0.19)	0.47 (0.37–0.57)	1.1 (0.77–1.4)	1.3[E] (0.58–2.1)
Total	40–59	2 (2009–2011)	357	0	0.51 (0.44–0.61)	0.19 (0.13–0.25)	0.51 (0.40–0.61)	1.2 (0.93–1.6)	1.7 (1.3–2.2)
Total	40–59	3 (2012–2013)	359	0	0.46 (0.42–0.50)	0.16 (0.13–0.20)	0.46 (0.41–0.50)	1.2 (1.0–1.3)	1.4 (0.88–1.9)
Total	60–79	2 (2009–2011)	288	0	0.50 (0.44–0.56)	0.19[E] (0.11–0.27)	0.48 (0.42–0.54)	1.2 (0.99–1.5)	1.6 (1.3–2.0)
Total	60–79	3 (2012–2013)	350	0	0.43 (0.36–0.51)	0.13 (0.086–0.18)	0.45 (0.34–0.56)	1.3 (0.85–1.7)	1.7 (1.3–2.0)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

Fluoride (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (mg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2520	0	0.50 (0.45–0.55)	0.20 (0.18–0.22)	0.48 (0.41–0.54)	1.2 (0.99–1.4)	1.6 (1.3–2.0)
Total	3–79	3 (2012–2013)	2669	0	0.46 (0.41–0.51)	0.18 (0.16–0.21)	0.45 (0.37–0.53)	1.0 (0.88–1.1)	1.4 (1.1–1.7)
Males	3–79	2 (2009–2011)	1263	0	0.46 (0.40–0.52)	0.20 (0.16–0.24)	0.43 (0.36–0.50)	1.0 (0.85–1.2)	1.2 (0.86–1.6)
Males	3–79	3 (2012–2013)	1320	0	0.40 (0.35–0.45)	0.16 (0.12–0.20)	0.41 (0.33–0.48)	0.87 (0.75–0.98)	1.1 (0.90–1.2)
Females	3–79	2 (2009–2011)	1257	0	0.54 (0.49–0.60)	0.21 (0.18–0.24)	0.52 (0.45–0.60)	1.4 (1.2–1.6)	1.9 (1.5–2.3)
Females	3–79	3 (2012–2013)	1349	0	0.53 (0.47–0.59)	0.22 (0.19–0.25)	0.53 (0.43–0.63)	1.2 (0.93–1.4)	1.6 (1.3–2.0)
Total	3–5	2 (2009–2011)	509	0	0.81 (0.73–0.90)	0.40 (0.34–0.46)	0.78 (0.72–0.85)	1.7 (1.3–2.0)	2.8[E] (1.7–4.0)
Total	3–5	3 (2012–2013)	492	0	0.76 (0.68–0.86)	0.37 (0.30–0.44)	0.73 (0.55–0.90)	1.5 (1.3–1.6)	1.7 (1.4–1.9)
Total	6–11	2 (2009–2011)	512	0	0.58 (0.53–0.63)	0.30 (0.28–0.32)	0.57 (0.50–0.63)	1.2 (0.96–1.4)	1.5 (1.0–2.0)
Total	6–11	3 (2012–2013)	549	0	0.50 (0.43–0.57)	0.24 (0.19–0.28)	0.45 (0.39–0.50)	1.0 (0.91–1.1)	1.2 (0.86–1.5)
Total	12–19	2 (2009–2011)	505	0	0.32 (0.28–0.35)	0.15 (0.13–0.16)	0.32 (0.28–0.37)	0.62 (0.52–0.72)	0.75 (0.54–0.97)
Total	12–19	3 (2012–2013)	548	0	0.29 (0.25–0.33)	0.14 (0.12–0.16)	0.27 (0.23–0.31)	0.61 (0.45–0.76)	0.76 (0.63–0.89)
Total	20–39	2 (2009–2011)	352	0	0.46 (0.39–0.55)	0.20 (0.17–0.24)	0.42 (0.33–0.51)	1.1 (0.74–1.4)	F
Total	20–39	3 (2012–2013)	371	0	0.40 (0.35–0.46)	0.16 (0.12–0.19)	0.39 (0.30–0.49)	0.87 (0.71–1.0)	1.0 (0.76–1.2)
Total	40–59	2 (2009–2011)	355	0	0.53 (0.46–0.60)	0.22 (0.18–0.26)	0.54 (0.43–0.66)	1.2 (0.94–1.4)	1.6 (1.2–2.0)
Total	40–59	3 (2012–2013)	359	0	0.52 (0.46–0.59)	0.22 (0.20–0.24)	0.55 (0.44–0.66)	1.0 (0.87–1.2)	1.2 (0.77–1.7)
Total	60–79	2 (2009–2011)	287	0	0.58 (0.50–0.68)	0.22 (0.16–0.27)	0.55 (0.44–0.67)	1.6 (1.3–1.9)	1.9 (1.4–2.5)
Total	60–79	3 (2012–2013)	350	0	0.52 (0.43–0.62)	0.20 (0.16–0.24)	0.52 (0.45–0.59)	1.4[E] (0.86–1.9)	2.1[E] (1.1–3.0)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

LEAD

Lead — Geometric means and selected percentiles of whole blood concentrations (µg/dL) for the Canadian population aged 6–79 years[a], Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	6–79	1 (2007–2009)	5319	0.02	1.3 (1.2–1.4)	0.60 (0.56–0.64)	1.2 (1.2–1.3)	3.0 (2.7–3.3)	3.8 (3.3–4.2)
Total	6–79	2 (2009–2011)	5575	0	1.2 (1.1–1.3)	0.54 (0.50–0.59)	1.1 (1.1–1.2)	2.5 (2.3–2.8)	3.2 (3.0–3.5)
Total	6–79	3 (2012–2013)	5067	0.10	1.1 (1.0–1.2)	0.49 (0.46–0.52)	1.0 (0.96–1.1)	2.4 (2.3–2.5)	3.2 (2.9–3.4)
Males	6–79	1 (2007–2009)	2576	0	1.5 (1.4–1.6)	0.71 (0.65–0.76)	1.4 (1.3–1.5)	3.2 (2.8–3.6)	4.2 (3.6–4.7)
Males	6–79	2 (2009–2011)	2687	0	1.3 (1.3–1.4)	0.62 (0.56–0.68)	1.2 (1.2–1.3)	2.8 (2.5–3.2)	3.4 (3.1–3.7)
Males	6–79	3 (2012–2013)	2540	0.08	1.2 (1.2–1.3)	0.57 (0.55–0.59)	1.2 (1.1–1.2)	2.7 (2.4–2.9)	3.6 (3.1–4.1)
Females	6–79	1 (2007–2009)	2743	0.04	1.2 (1.1–1.3)	0.55 (0.50–0.59)	1.1 (0.99–1.2)	2.7 (2.3–3.1)	3.5 (3.0–3.9)
Females	6–79	2 (2009–2011)	2888	0	1.1 (1.0–1.1)	0.50 (0.46–0.54)	1.0 (0.96–1.1)	2.3 (2.1–2.5)	2.8 (2.6–3.0)
Females	6–79	3 (2012–2013)	2527	0.12	0.97 (0.91–1.0)	0.42 (0.37–0.47)	0.94 (0.88–1.0)	2.2 (2.1–2.3)	2.7 (2.2–3.1)

a For the purpose of total population comparisons, only values from participants aged 6–79 years were included as participants under the age of 6 years were not included in cycle 1 (2007–2009).

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

Lead — Geometric means and selected percentiles of whole blood concentrations (µg/dL) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–79	2 (2009–2011)	6070	0	1.2 (1.1–1.2)	0.54 (0.50–0.59)	1.1 (1.1–1.2)	2.5 (2.3–2.7)	3.2 (2.9–3.4)
Total	3–79	3 (2012–2013)	5538	0.09	1.1 (1.0–1.1)	0.49 (0.46–0.52)	1.0 (0.95–1.1)	2.4 (2.3–2.5)	3.2 (2.9–3.4)
Males	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Males	3–79	2 (2009–2011)	2940	0	1.3 (1.3–1.4)	0.62 (0.56–0.67)	1.2 (1.2–1.3)	2.8 (2.5–3.1)	3.4 (3.1–3.7)
Males	3–79	3 (2012–2013)	2769	0.07	1.2 (1.2–1.3)	0.56 (0.55–0.58)	1.1 (1.0–1.2)	2.6 (2.4–2.9)	3.6 (3.1–4.0)
Females	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Females	3–79	2 (2009–2011)	3130	0	1.1 (1.0–1.1)	0.50 (0.46–0.54)	1.0 (0.96–1.1)	2.3 (2.1–2.5)	2.8 (2.6–3.0)
Females	3–79	3 (2012–2013)	2769	0.11	0.96 (0.90–1.0)	0.42 (0.37–0.47)	0.93 (0.87–1.0)	2.2 (2.1–2.3)	2.6 (2.2–3.1)
Total	3–5[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–5	2 (2009–2011)	495	0	0.93 (0.87–1.0)	0.51 (0.44–0.58)	0.93 (0.86–1.0)	1.6 (1.5–1.8)	2.1 (1.8–2.4)
Total	3–5	3 (2012–2013)	471	0	0.77 (0.73–0.82)	0.40 (0.33–0.47)	0.72 (0.68–0.77)	1.4 (1.0–1.8)	2.2 (1.4–2.9)
Total	6–11	1 (2007–2009)	910	0	0.90 (0.81–0.99)	0.53 (0.49–0.56)	0.87 (0.77–0.97)	1.6 (1.4–1.7)	1.9 (1.6–2.2)
Total	6–11	2 (2009–2011)	961	0	0.79 (0.74–0.84)	0.44 (0.38–0.50)	0.74 (0.68–0.81)	1.4 (1.2–1.6)	1.7 (1.5–1.9)
Total	6–11	3 (2012–2013)	944	0	0.71 (0.67–0.76)	0.39 (0.36–0.42)	0.67 (0.64–0.71)	1.3 (1.1–1.5)	1.6 (1.3–1.9)
Total	12–19	1 (2007–2009)	945	0	0.80 (0.74–0.85)	0.47 (0.44–0.50)	0.76 (0.70–0.82)	1.3 (1.1–1.5)	1.6 (1.4–1.8)
Total	12–19	2 (2009–2011)	997	0	0.71 (0.68–0.75)	0.39 (0.35–0.43)	0.68 (0.63–0.72)	1.2 (1.1–1.2)	1.6 (1.3–1.8)
Total	12–19	3 (2012–2013)	977	0.10	0.64 (0.60–0.69)	0.34 (0.32–0.36)	0.60 (0.56–0.64)	1.2 (1.1–1.4)	1.5 (1.3–1.6)
Total	20–39	1 (2007–2009)	1165	0.09	1.1 (1.0–1.2)	0.57 (0.52–0.61)	1.0 (0.95–1.1)	2.3 (2.0–2.6)	3.1 (2.7–3.4)
Total	20–39	2 (2009–2011)	1313	0	0.98 (0.88–1.1)	0.50 (0.43–0.57)	0.94 (0.87–1.0)	1.8 (1.5–2.1)	2.2 (1.6–2.9)
Total	20–39	3 (2012–2013)	1032	0.19	0.90 (0.79–1.0)	0.44 (0.36–0.53)	0.88 (0.79–0.97)	1.7 (1.5–2.0)	2.1 (1.8–2.4)
Total	40–59	1 (2007–2009)	1220	0	1.6 (1.5–1.8)	0.82 (0.69–0.94)	1.5 (1.4–1.6)	3.1 (2.6–3.6)	3.8 (3.1–4.5)
Total	40–59	2 (2009–2011)	1222	0	1.4 (1.3–1.5)	0.70 (0.61–0.79)	1.4 (1.3–1.4)	2.7 (2.4–3.0)	3.2 (2.9–3.5)
Total	40–59	3 (2012–2013)	1071	0.09	1.3 (1.3–1.4)	0.61 (0.55–0.68)	1.3 (1.2–1.4)	2.6 (2.2–2.9)	3.5 (2.9–4.2)
Total	60–79	1 (2007–2009)	1079	0	2.1 (1.9–2.3)	1.0 (0.92–1.1)	2.0 (1.8–2.2)	4.1 (3.5–4.8)	5.2 (4.2–6.2)
Total	60–79	2 (2009–2011)	1082	0	1.9 (1.8–1.9)	1.0 (0.94–1.1)	1.7 (1.7–1.8)	3.5 (3.2–3.8)	4.2 (3.8–4.6)
Total	60–79	3 (2012–2013)	1043	0.10	1.6 (1.6–1.7)	0.81 (0.78–0.85)	1.6 (1.4–1.7)	3.3 (3.0–3.5)	4.0 (3.6–4.4)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

b Data not available as participants under the age of 6 years were not included in cycle 1 (2007–2009).

MERCURY

Mercury (inorganic)

Mercury (inorganic) — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 6–79 years[a], Canadian Health Measures Survey cycle 1 (2007–2009) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	6–79	1 (2007–2009)	5444	49.63	–	<LOD	0.24 (0.19–0.29)	1.8 (1.6–2.0)	2.9 (2.5–3.3)
Total	6–79	3 (2012–2013)	5176	47.97	–	<LOD	0.20 (<LOD–0.25)	1.3 (1.1–1.5)	2.0 (1.7–2.3)
Males	6–79	1 (2007–2009)	2636	48.33	–	<LOD	0.24 (0.19–0.29)	1.7 (1.6–1.9)	2.7 (2.3–3.0)
Males	6–79	3 (2012–2013)	2582	46.90	–	<LOD	0.20[E] (<LOD–0.28)	1.2 (0.93–1.5)	1.9 (1.3–2.4)
Females	6–79	1 (2007–2009)	2808	50.85	–	<LOD	0.23 (0.18–0.29)	2.0 (1.7–2.3)	3.1 (2.7–3.6)
Females	6–79	3 (2012–2013)	2594	49.04	–	<LOD	0.20 (<LOD–0.26)	1.4 (0.99–1.8)	2.2 (1.5–2.8)

a For the purpose of total population comparisons, only values from participants aged 6–79 years were included as participants under the age of 6 years were not included in cycle 1 (2007–2009).

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

Mercury (inorganic) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 6–79 years[a], Canadian Health Measures Survey cycle 1 (2007–2009) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	6–79	1 (2007–2009)	5432	49.63	–	<LOD	0.26 (0.19–0.32)	1.6 (1.5–1.8)	2.5 (2.1–2.9)
Total	6–79	3 (2012–2013)	5175	47.97	–	<LOD	0.24 (0.20–0.27)	1.0 (0.94–1.1)	1.6 (1.3–1.9)
Males	6–79	1 (2007–2009)	2628	48.33	–	<LOD	0.21 (0.16–0.26)	1.2 (1.1–1.3)	1.8 (1.5–2.1)
Males	6–79	3 (2012–2013)	2582	46.90	–	<LOD	0.21 (0.17–0.24)	0.87 (0.63–1.1)	1.2 (1.0–1.4)
Females	6–79	1 (2007–2009)	2804	50.85	–	<LOD	<LOD	2.1 (1.7–2.4)	2.8 (2.2–3.5)
Females	6–79	3 (2012–2013)	2593	49.04	–	<LOD	0.29 (0.23–0.35)	1.3 (0.88–1.6)	1.9 (1.5–2.4)

a For the purpose of total population comparisons, only values from participants aged 6–79 years were included as participants under the age of 6 years were not included in cycle 1 (2007–2009).

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

Mercury (inorganic) — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–79	3 (2012–2013)	5696	50.42	–	<LOD	0.19 (<LOD–0.24)	1.3 (1.1–1.5)	2.0 (1.7–2.3)
Males	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Males	3–79	3 (2012–2013)	2842	49.37	–	<LOD	0.20[E] (<LOD–0.27)	1.2 (0.92–1.5)	1.9 (1.3–2.4)
Females	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Females	3–79	3 (2012–2013)	2854	51.47	–	<LOD	0.19 (<LOD–0.25)	1.4 (0.97–1.8)	2.1 (1.5–2.8)
Total	3–5[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–5	3 (2012–2013)	520	74.81	–	<LOD	<LOD	0.28[E] (<LOD–0.48)	0.59[E] (0.35–0.84)
Total	6–11	1 (2007–2009)	1028	66.05	–	<LOD	<LOD	0.99[E] (0.56–1.4)	1.8[E] (0.99–2.7)
Total	6–11	3 (2012–2013)	1010	61.29	–	<LOD	<LOD	0.93[E] (0.50–1.4)	F
Total	12–19	1 (2007–2009)	975	57.54	–	<LOD	<LOD	1.2 (0.76–1.6)	2.2 (1.5–3.0)
Total	12–19	3 (2012–2013)	997	59.58	–	<LOD	<LOD	0.55[E] (0.33–0.78)	1.1[E] (0.53–1.6)
Total	20–39	1 (2007–2009)	1166	46.23	–	<LOD	0.22 (0.16–0.28)	1.4 (1.0–1.7)	2.3 (1.8–2.7)
Total	20–39	3 (2012–2013)	1048	45.13	–	<LOD	0.20[E] (<LOD–0.28)	1.1 (0.87–1.3)	1.9[E] (0.89–3.0)
Total	40–59	1 (2007–2009)	1207	36.04	0.31 (0.25–0.37)	<LOD	0.37 (0.28–0.47)	2.5 (1.8–3.2)	3.5 (2.3–4.7)
Total	40–59	3 (2012–2013)	1080	36.20	0.31 (0.26–0.39)	<LOD	0.30 (0.20–0.40)	1.7 (1.2–2.2)	2.2 (1.7–2.6)
Total	60–79	1 (2007–2009)	1068	45.69	–	<LOD	0.25[E] (0.15–0.35)	2.0 (1.4–2.5)	3.0 (2.5–3.5)
Total	60–79	3 (2012–2013)	1041	39.00	0.26 (0.23–0.30)	<LOD	0.24 (0.18–0.30)	1.4 (0.98–1.8)	2.3 (1.6–2.9)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

b Data not available as participants under the age of 6 years were not included in cycle 1 (2007–2009).

E Use data with caution.

F Data is too unreliable to be published.

Mercury (inorganic) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–79	3 (2012–2013)	5694	50.42	–	<LOD	<LOD	1.0 (0.94–1.1)	1.6 (1.3–1.9)
Males	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Males	3–79	3 (2012–2013)	2842	49.37	–	<LOD	0.21 (0.17–0.24)	0.86 (0.63–1.1)	1.2 (1.1–1.4)
Females	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Females	3–79	3 (2012–2013)	2852	51.47	–	<LOD	<LOD	1.2 (0.87–1.5)	1.9 (1.5–2.3)
Total	3–5[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–5	3 (2012–2013)	519	74.81	–	<LOD	<LOD	0.73[E] (0.45–1.0)	1.0 (0.72–1.3)
Total	6–11	1 (2007–2009)	1025	66.05	–	<LOD	<LOD	1.3[E] (0.62–1.9)	2.0 (1.3–2.7)
Total	6–11	3 (2012–2013)	1010	61.29	–	<LOD	<LOD	0.99[E] (0.55–1.4)	1.9[E] (0.84–3.0)
Total	12–19	1 (2007–2009)	975	57.54	–	<LOD	<LOD	0.79 (0.55–1.0)	1.3[E] (0.79–1.8)
Total	12–19	3 (2012–2013)	997	59.58	–	<LOD	<LOD	0.42[E] (0.27–0.58)	0.73[E] (0.42–1.0)
Total	20–39	1 (2007–2009)	1162	46.23	–	<LOD	0.21 (0.18–0.24)	1.1 (0.89–1.4)	1.9 (1.5–2.2)
Total	20–39	3 (2012–2013)	1048	45.13	–	<LOD	0.22 (0.18–0.26)	0.85 (0.56–1.2)	1.2 (0.97–1.3)
Total	40–59	1 (2007–2009)	1202	36.04	0.39 (0.33–0.48)	<LOD	0.43 (0.33–0.52)	2.1 (1.5–2.7)	3.0 (2.3–3.7)
Total	40–59	3 (2012–2013)	1079	36.20	0.33 (0.29–0.38)	<LOD	0.33 (0.27–0.40)	1.3 (0.91–1.7)	1.7 (1.5–2.0)
Total	60–79	1 (2007–2009)	1068	45.69	–	<LOD	0.29[E] (0.17–0.42)	2.0 (1.7–2.3)	2.7 (2.1–3.4)
Total	60–79	3 (2012–2013)	1041	39.00	0.32 (0.28–0.36)	<LOD	0.32 (0.27–0.37)	1.3 (0.95–1.6)	2.2 (1.6–2.8)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

b Data not available as participants under the age of 6 years were not included in cycle 1 (2007–2009).

E Use data with caution.

Mercury (total)

Mercury (total) — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 6–79 years[a], Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10[th] (95% CI)	50[th] (95% CI)	90[th] (95% CI)	95[th] (95% CI)
Total	6–79	1 (2007–2009)	5319	11.64	0.69 (0.55–0.86)	<LOD	0.81 (0.64–0.97)	3.0 (2.2–3.9)	4.6[E] (2.5–6.7)
Total	6–79	2 (2009–2011)	5575	14.28	0.71 (0.57–0.89)	<LOD	0.76 (0.57–0.96)	3.5 (2.4–4.6)	5.6[E] (3.3–7.8)
Total	6–79	3 (2012–2013)	5067	34.93	0.81 (0.65–1.0)	<LOD	0.81 (0.63–0.99)	3.2[E] (1.5–5.0)	5.4[E] (3.1–7.6)
Males	6–79	1 (2007–2009)	2576	12.11	0.68 (0.55–0.84)	<LOD	0.79 (0.64–0.94)	3.1 (2.1–4.1)	5.1[E] (2.7–7.5)
Males	6–79	2 (2009–2011)	2687	14.77	0.74 (0.58–0.94)	<LOD	0.80 (0.56–1.0)	3.9 (2.7–5.2)	6.3[E] (2.9–9.7)
Males	6–79	3 (2012–2013)	2540	35.67	0.78 (0.61–1.0)	<LOD	0.77 (0.56–0.98)	3.3[E] (1.4–5.1)	5.7[E] (3.4–7.9)
Females	6–79	1 (2007–2009)	2743	11.19	0.70 (0.56–0.88)	<LOD[E] (<LOD–0.11)	0.82 (0.63–1.0)	3.0 (2.1–3.8)	4.5[E] (2.6–6.4)
Females	6–79	2 (2009–2011)	2888	13.82	0.69 (0.55–0.86)	<LOD	0.74 (0.56–0.92)	3.0 (2.0–4.0)	5.1[E] (3.0–7.2)
Females	6–79	3 (2012–2013)	2527	34.19	0.83 (0.68–1.0)	<LOD	0.84 (0.68–0.99)	3.2[E] (1.4–5.0)	5.1[E] (2.4–7.9)

a For the purpose of total population comparisons, only values from participants aged 6–79 years were included as participants under the age of 6 years were not included in cycle 1 (2007–2009).

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

Mercury (total) — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–79	2 (2009–2011)	6070	15.55	0.69 (0.56–0.87)	<LOD	0.74 (0.55–0.93)	3.4 (2.4–4.5)	5.5[E] (3.3–7.6)
Total	3–79	3 (2012–2013)	5538	37.02	0.79 (0.64–0.97)	<LOD	0.79 (0.62–0.96)	3.2[E] (1.5–4.9)	5.2[E] (3.0–7.5)
Males	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Males	3–79	2 (2009–2011)	2940	16.16	0.72 (0.56–0.91)	<LOD	0.76 (0.53–0.99)	3.9 (2.7–5.1)	6.1[E] (2.7–9.5)
Males	3–79	3 (2012–2013)	2769	37.63	0.76 (0.60–0.97)	<LOD	0.74 (0.54–0.94)	3.2[E] (1.3–5.0)	5.6[E] (3.4–7.8)
Females	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Females	3–79	2 (2009–2011)	3130	14.98	0.67 (0.54–0.83)	<LOD	0.71 (0.53–0.88)	3.0 (2.0–4.0)	5.1[E] (3.0–7.1)
Females	3–79	3 (2012–2013)	2769	36.40	0.81 (0.67–0.99)	<LOD	0.82 (0.67–0.97)	3.2[E] (1.4–4.9)	5.1[E] (2.4–7.8)
Total	3–5[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–5	2 (2009–2011)	495	29.90	0.27 (0.20–0.36)	<LOD	0.19[E] (<LOD–0.29)	1.4[E] (0.44–2.3)	3.0[E] (1.7–4.3)
Total	3–5	3 (2012–2013)	471	59.45	–	<LOD	<LOD	1.3 (1.0–1.7)	1.7[E] (0.88–2.5)
Total	6–11	1 (2007–2009)	910	24.84	0.26 (0.22–0.32)	<LOD	0.24 (0.18–0.29)	1.3 (1.0–1.6)	2.1[E] (1.3–2.9)
Total	6–11	2 (2009–2011)	961	29.03	0.28 (0.22–0.34)	<LOD	0.21[E] (0.11–0.30)	1.2 (0.84–1.5)	2.0 (1.3–2.6)
Total	6–11	3 (2012–2013)	944	54.77	–	<LOD	<LOD	1.2 (0.78–1.7)	1.9[E] (0.91–2.9)
Total	12–19	1 (2007–2009)	945	20.85	0.30 (0.23–0.40)	<LOD	0.28 (0.20–0.37)	1.3[E] (0.47–2.2)	2.2[E] (0.88–3.5)
Total	12–19	2 (2009–2011)	997	26.58	0.27 (0.21–0.35)	<LOD	0.19[E] (<LOD–0.30)	1.3 (0.84–1.7)	2.4[E] (1.3–3.5)
Total	12–19	3 (2012–2013)	977	52.61	–	<LOD	<LOD	1.6[E] (0.62–2.6)	2.8[E] (1.3–4.4)
Total	20–39	1 (2007–2009)	1165	8.76	0.65 (0.52–0.81)	<LOD	0.76 (0.61–0.91)	3.0[E] (1.9–4.1)	4.9[E] (2.4–7.4)
Total	20–39	2 (2009–2011)	1313	10.05	0.64 (0.47–0.85)	<LOD	0.65 (0.43–0.86)	2.9 (2.0–3.9)	5.2[E] (2.6–7.8)
Total	20–39	3 (2012–2013)	1032	30.91	0.82 (0.65–1.0)	<LOD	0.77 (0.57–0.96)	4.1[E] (1.5–6.6)	6.0[E] (3.6–8.3)
Total	40–59	1 (2007–2009)	1220	3.52	1.0 (0.80–1.3)	0.21[E] (0.12–0.30)	1.1 (0.83–1.3)	3.6 (2.3–4.9)	6.4[E] (3.0–9.8)
Total	40–59	2 (2009–2011)	1222	5.16	1.0 (0.79–1.3)	0.15 (0.11–0.20)	1.0 (0.84–1.2)	4.1[E] (2.4–5.8)	7.3[E] (2.5–12)
Total	40–59	3 (2012–2013)	1071	20.54	0.96 (0.74–1.2)	<LOD	0.99 (0.78–1.2)	3.4[E] (1.5–5.4)	5.2[E] (2.8–7.6)
Total	60–79	1 (2007–2009)	1079	4.73	0.87 (0.64–1.2)	F	0.96 (0.75–1.2)	3.4 (2.4–4.4)	4.8[E] (2.7–6.9)
Total	60–79	2 (2009–2011)	1082	5.27	1.1 (0.86–1.5)	0.17[E] (<LOD–0.28)	1.2 (0.89–1.5)	4.3 (3.1–5.5)	6.5[E] (3.9–9.1)
Total	60–79	3 (2012–2013)	1043	19.18	1.0 (0.82–1.3)	<LOD	0.99 (0.71–1.3)	3.8[E] (2.2–5.3)	6.7[E] (1.9–11)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

b Data not available as participants under the age of 6 years were not included in cycle 1 (2007–2009).

E Use data with caution.

F Data is too unreliable to be published.

Methylmercury

Methylmercury — Geometric means and selected percentiles of whole blood concentrations (µg Hg/L) for the Canadian population aged 20–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	20–79	3 (2012-2013)	1032	18.70	0.64 (0.48 - 0.84)	<LOD	0.72 (0.50 - 0.95)	3.1[E] (1.2 - 5.0)	5.2[E] (2.7 - 7.6)
Males	20–79	3 (2012-2013)	502	18.33	0.63[E] (0.38 - 1.0)	<LOD	0.63[E] (0.23 - 1.0)	4.3[E] (1.2 - 7.3)	7.5[E] (3.9 - 11)
Females	20–79	3 (2012-2013)	530	19.06	0.65 (0.53 - 0.79)	<LOD	0.83 (0.68 - 0.97)	2.6[E] (1.3 - 3.9)	4.4[E] (2.8 - 6.1)
Total	20–39	3 (2012-2013)	359	24.51	0.56 (0.42 - 0.76)	<LOD	0.60 (0.38 - 0.81)	F	4.6[E] (1.7 - 7.4)
Total	40–59	3 (2012-2013)	313	19.17	0.60[E] (0.41 - 0.89)	<LOD	0.66[E] (0.24 - 1.1)	3.0[E] (0.85 - 5.1)	5.4[E] (2.1 - 8.7)
Total	60–79	3 (2012-2013)	360	12.50	0.87 (0.62 - 1.2)	<LOD	0.99 (0.65 - 1.3)	3.1[E] (1.8 - 4.5)	F

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Results for Nicotine Metabolite

COTININE

Cotinine (non-smokers) — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 6–79 years[a], Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	6–79	1 (2007–2009)	4704	85.84	–	<LOD	<LOD	3.3[E] (1.6–4.9)	F
Total	6–79	2 (2009–2011)	4895	86.88	–	<LOD	<LOD	2.6[E] (<LOD–4.2)	F
Total	6–79	3 (2012–2013)	4456	88.64	–	<LOD	<LOD	<LOD	F
Males	6–79	1 (2007–2009)	2252	82.95	–	<LOD	<LOD	4.4[E] (1.7–7.0)	F
Males	6–79	2 (2009–2011)	2304	84.55	–	<LOD	<LOD	F	F
Males	6–79	3 (2012–2013)	2183	87.27	–	<LOD	<LOD	F	F
Females	6–79	1 (2007–2009)	2452	88.50	–	<LOD	<LOD	F	9.9[E] (3.4–16)
Females	6–79	2 (2009–2011)	2591	88.96	–	<LOD	<LOD	1.4[E] (<LOD–2.3)	F
Females	6–79	3 (2012–2013)	2273	89.97	–	<LOD	<LOD	<LOD	F

a For the purpose of total population comparisons, only values from participants aged 6–79 years were included as participants under the age of 6 years were not included in cycle 1 (2007–2009).

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Cotinine (non-smokers) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 6–79 years[a], Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[b]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	6–79	1 (2007–2009)	4694	85.84	–	<LOD	<LOD	4.6 (3.3–5.8)	F
Total	6–79	2 (2009–2011)	4883	86.88	–	<LOD	<LOD	3.1 (2.1–4.1)	F
Total	6–79	3 (2012–2013)	4455	88.64	–	<LOD	<LOD	2.5 (2.0–3.1)	F
Males	6–79	1 (2007–2009)	2246	82.95	–	<LOD	<LOD	4.8[E] (2.7–6.9)	F
Males	6–79	2 (2009–2011)	2299	84.55	–	<LOD	<LOD	3.8[E] (1.7–5.9)	F
Males	6–79	3 (2012–2013)	2183	87.27	–	<LOD	<LOD	2.3[E] (1.4–3.3)	F
Females	6–79	1 (2007–2009)	2448	88.50	–	<LOD	<LOD	4.0 (2.7–5.3)	F
Females	6–79	2 (2009–2011)	2584	88.96	–	<LOD	<LOD	3.0 (2.2–3.7)	F
Females	6–79	3 (2012–2013)	2272	89.97	–	<LOD	<LOD	2.7 (2.1–3.2)	4.4[E] (1.7–7.0)

a For the purpose of total population comparisons, only values from participants aged 6–79 years were included as participants under the age of 6 years were not included in cycle 1 (2007–2009).

b If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Cotinine (non-smokers) — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–79	2 (2009–2011)	5468	86.85	–	<LOD	<LOD	2.6[E] (<LOD–4.4)	F
Total	3–79	3 (2012–2013)	4978	88.59	–	<LOD	<LOD	<LOD	F
Males	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Males	3–79	2 (2009–2011)	2594	84.93	–	<LOD	<LOD	F	F
Males	3–79	3 (2012–2013)	2444	87.11	–	<LOD	<LOD	F	F
Females	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Females	3–79	2 (2009–2011)	2874	88.59	–	<LOD	<LOD	1.5[E] (<LOD–2.5)	F
Females	3–79	3 (2012–2013)	2534	90.02	–	<LOD	<LOD	<LOD	F
Total	3–5[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–5	2 (2009–2011)	573	86.56	–	<LOD	<LOD	F	F
Total	3–5	3 (2012–2013)	522	88.12	–	<LOD	<LOD	F	F
Total	6–11	1 (2007–2009)	1045	83.83	–	<LOD	<LOD	3.9[E] (1.9–5.8)	10[E] (5.7–14)
Total	6–11	2 (2009–2011)	1061	83.79	–	<LOD	<LOD	4.9[E] (1.9–7.9)	12[E] (6.3–18)
Total	6–11	3 (2012–2013)	1007	86.79	–	<LOD	<LOD	F	7.1[E] (2.7–11)
Total	12–19	1 (2007–2009)	882	80.27	–	<LOD	<LOD	8.3[E] (3.8–13)	19[E] (8.3–30)
Total	12–19	2 (2009–2011)	928	80.06	–	<LOD	<LOD	F	F
Total	12–19	3 (2012–2013)	889	82.56	–	<LOD	<LOD	F	13[E] (7.6–19)
Total	20–39	1 (2007–2009)	874	85.35	–	<LOD	<LOD	F	F
Total	20–39	2 (2009–2011)	1009	86.22	–	<LOD	<LOD	F	F
Total	20–39	3 (2012–2013)	792	90.53	–	<LOD	<LOD	<LOD	F
Total	40–59	1 (2007–2009)	947	88.81	–	<LOD	<LOD	F	F
Total	40–59	2 (2009–2011)	972	91.56	–	<LOD	<LOD	<LOD	F
Total	40–59	3 (2012–2013)	851	91.19	–	<LOD	<LOD	F	F
Total	60–79	1 (2007–2009)	956	90.69	–	<LOD	<LOD	<LOD	F
Total	60–79	2 (2009–2011)	925	93.08	–	<LOD	<LOD	<LOD	F
Total	60–79	3 (2012–2013)	917	92.58	–	<LOD	<LOD	<LOD	F

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

b Data not available as participants under the age of 6 years were not included in cycle 1 (2007–2009).

E Use data with caution.

F Data is too unreliable to be published.

Cotinine (non-smokers) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–79	2 (2009–2011)	5455	86.85	–	<LOD	<LOD	3.3 (2.2–4.4)	F
Total	3–79	3 (2012–2013)	4976	88.59	–	<LOD	<LOD	2.6 (2.0–3.2)	6.1[E] (1.9–10)
Males	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Males	3–79	2 (2009–2011)	2588	84.93	–	<LOD	<LOD	3.9[E] (2.0–5.9)	F
Males	3–79	3 (2012–2013)	2444	87.11	–	<LOD	<LOD	2.4[E] (1.4–3.3)	F
Females	3–79[b]	1 (2007–2009)	–	–	–	–	–	–	–
Females	3–79	2 (2009–2011)	2867	88.59	–	<LOD	<LOD	3.0 (2.0–3.9)	F
Females	3–79	3 (2012–2013)	2532	90.02	–	<LOD	<LOD	2.9 (2.3–3.5)	5.2[E] (2.6–7.8)
Total	3–5[b]	1 (2007–2009)	–	–	–	–	–	–	–
Total	3–5	2 (2009–2011)	572	86.56	–	<LOD	<LOD	F	F
Total	3–5	3 (2012–2013)	521	88.12	–	<LOD	<LOD	5.6[E] (3.5–7.7)	F
Total	6–11	1 (2007–2009)	1042	83.83	–	<LOD	<LOD	6.2[E] (1.9–10)	F
Total	6–11	2 (2009–2011)	1059	83.79	–	<LOD	<LOD	5.2[E] (1.9–8.5)	12[E] (5.4–18)
Total	6–11	3 (2012–2013)	1007	86.79	–	<LOD	<LOD	3.5[E] (1.1–5.8)	7.7[E] (2.6–13)
Total	12–19	1 (2007–2009)	881	80.27	–	<LOD	<LOD	7.9[E] (4.6–11)	F
Total	12–19	2 (2009–2011)	926	80.06	–	<LOD	<LOD	F	F
Total	12–19	3 (2012–2013)	889	82.56	–	<LOD	<LOD	3.2[E] (<LOD–5.5)	F
Total	20–39	1 (2007–2009)	871	85.35	–	<LOD	<LOD	4.5[E] (1.7–7.4)	F
Total	20–39	2 (2009–2011)	1007	86.22	–	<LOD	<LOD	F	F
Total	20–39	3 (2012–2013)	792	90.53	–	<LOD	<LOD	2.2 (1.5–2.9)	3.3[E] (1.3–5.2)
Total	40–59	1 (2007–2009)	944	88.81	–	<LOD	<LOD	4.6[E] (2.9–6.4)	F
Total	40–59	2 (2009–2011)	970	91.56	–	<LOD	<LOD	2.8[E] (1.7–3.9)	4.7[E] (1.6–7.8)
Total	40–59	3 (2012–2013)	850	91.19	–	<LOD	<LOD	3.0[E] (1.5–4.4)	F
Total	60–79	1 (2007–2009)	956	90.69	–	<LOD	<LOD	3.0 (1.9–4.0)	F
Total	60–79	2 (2009–2011)	921	93.08	–	<LOD	<LOD	2.7 (1.9–3.6)	F
Total	60–79	3 (2012–2013)	917	92.58	–	<LOD	<LOD	2.6 (1.9–3.2)	4.1[E] (1.4–6.8)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

b Data not available as participants under the age of 6 years were not included in cycle 1 (2007–2009).

E Use data with caution.

F Data is too unreliable to be published.

Cotinine (smokers) — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	1 (2007–2009)	805	4.22	590 (420–820)	F	1000 (810–1200)	2200 (2000–2400)	2600 (2300–2900)
Total	12–79	2 (2009–2011)	819	5.74	490 (340–700)	F	1000 (810–1200)	2200 (1900–2500)	2600 (2100–3100)
Total	12–79	3 (2012–2013)	701	5.14	490 (410–590)	F	990 (900–1100)	2000 (1600–2300)	2300 (2000–2600)
Males	12–79	1 (2007–2009)	406	4.43	660[E] (400–1100)	F	1200 (920–1500)	2300 (2000–2600)	2800 (2400–3300)
Males	12–79	2 (2009–2011)	425	4.47	470[E] (280–770)	F	1000 (780–1200)	2300 (1900–2700)	2900 (2300–3500)
Males	12–79	3 (2012–2013)	387	5.17	460 (340–630)	F	990 (820–1100)	2100 (1700–2500)	2400 (2100–2600)
Females	12–79	1 (2007–2009)	399	4.01	520 (390–700)	F	860 (640–1100)	2100 (1900–2300)	2500 (2300–2700)
Females	12–79	2 (2009–2011)	394	7.11	510[E] (320–810)	F	1000 (720–1300)	2100 (1800–2400)	2400 (1900–2900)
Females	12–79	3 (2012–2013)	314	5.10	550 (380–790)	F	990 (760–1200)	1700 (1200–2300)	2100 (1700–2500)
Total	12–19	1 (2007–2009)	102	10.78	160[E] (78–330)	F	F	1600 (1400–1900)	X
Total	12–19	2 (2009–2011)	102	11.76	F	<LOD	F	1700 (1200–2300)	X
Total	12–19	3 (2012–2013)	98	14.29	F	X	F	2100[E] (1200–3000)	X
Total	20–39	1 (2007–2009)	300	3.00	500[E] (300–850)	F	930 (620–1200)	2000 (1800–2200)	2500 (2100–2900)
Total	20–39	2 (2009–2011)	311	9.00	400[E] (260–630)	F	850 (570–1100)	2200 (1600–2900)	2900 (2200–3600)
Total	20–39	3 (2012–2013)	254	5.12	310[E] (190–520)	F	700[E] (350–1100)	1600 (1300–1900)	2000 (1600–2400)
Total	40–59	1 (2007–2009)	275	3.27	830 (610–1100)	F	1200 (910–1500)	2500 (2200–2800)	2800 (2400–3100)
Total	40–59	2 (2009–2011)	253	1.58	800[E] (480–1300)	F	1400 (1000–1700)	2200 (1900–2600)	2600 (2000–3300)
Total	40–59	3 (2012–2013)	228	2.63	770 (550–1100)	340[E] (150–530)	1000 (890–1200)	2100 (1700–2600)	2300 (2000–2700)
Total	60–79	1 (2007–2009)	128	3.91	650[E] (430–980)	F	860 (600–1100)	2200 (1900–2400)	X
Total	60–79	2 (2009–2011)	153	1.96	F	F	980 (720–1200)	1800 (1500–2000)	X
Total	60–79	3 (2012–2013)	121	2.48	940 (800–1100)	390[E] (240–540)	990 (830–1200)	2100 (1400–2700)	X

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

X Suppressed to meet the confidentiality requirements of the *Statistics Act*.

Cotinine (smokers) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009), cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	1 (2007–2009)	803	4.22	650 (480–890)	F	1000 (830–1200)	3000 (2500–3500)	4400 (3500–5300)
Total	12–79	2 (2009–2011)	816	5.74	430[E] (290–630)	F	840 (620–1100)	2700 (1800–3700)	3800[E] (2300–5300)
Total	12–79	3 (2012–2013)	701	5.14	440 (340–570)	F	750 (590–900)	2600[E] (1600–3700)	3900[E] (2100–5800)
Males	12–79	1 (2007–2009)	405	4.43	560[E] (360–880)	F	930 (680–1200)	2300 (1900–2700)	3200 (2300–4200)
Males	12–79	2 (2009–2011)	425	4.47	370[E] (210–620)	F	730 (480–980)	2700[E] (1600–3700)	3700[E] (2300–5100)
Males	12–79	3 (2012–2013)	387	5.17	360[E] (250–520)	F	710 (500–920)	2300 (1500–3100)	3000[E] (1900–4100)
Females	12–79	1 (2007–2009)	398	4.01	780 (590–1000)	F	1100 (900–1400)	3700 (2900–4500)	5500 (4300–6600)
Females	12–79	2 (2009–2011)	391	7.11	520[E] (300–890)	F	1000 (650–1400)	F	4800[E] (2300–7400)
Females	12–79	3 (2012–2013)	314	5.10	600 (420–850)	F	860[E] (510–1200)	3200[E] (1000–5300)	4900 (3300–6400)
Total	12–19	1 (2007–2009)	102	10.78	120[E] (58–250)	<LOD	290[E] (<LOD–470)	1400[E] (600–2200)	X
Total	12–19	2 (2009–2011)	102	11.76	F	<LOD	F	1300 (990–1500)	X
Total	12–19	3 (2012–2013)	98	14.29	F	X	F	940 (610–1300)	X
Total	20–39	1 (2007–2009)	299	3.00	510[E] (310–840)	F	850 (560–1100)	2200 (1900–2600)	2500 (1900–3000)
Total	20–39	2 (2009–2011)	311	9.00	330[E] (200–530)	F	710 (470–940)	2300 (1500–3000)	3200[E] (1700–4700)
Total	20–39	3 (2012–2013)	254	5.12	230[E] (120–410)	F	520[E] (310–720)	1500[E] (830–2200)	2100[E] (1300–2900)
Total	40–59	1 (2007–2009)	275	3.27	1000 (810–1300)	F	1300 (920–1600)	4100 (2900–5400)	5500 (4400–6600)
Total	40–59	2 (2009–2011)	251	1.58	710[E] (400–1200)	F	990[E] (560–1400)	3400[E] (1400–5400)	4900[E] (2800–7000)
Total	40–59	3 (2012–2013)	228	2.63	840[E] (520–1300)	390[E] (190–580)	940[E] (570–1300)	3500[E] (1500–5500)	5200[E] (2500–7800)
Total	60–79	1 (2007–2009)	127	3.91	840[E] (530–1300)	F	1300 (1000–1500)	3200 (2100–4300)	X
Total	60–79	2 (2009–2011)	152	1.96	F	F	1000 (700–1400)	3000[E] (1700–4300)	X
Total	60–79	3 (2012–2013)	121	2.48	960 (730–1200)	390 (270–500)	960[E] (530–1400)	3100[E] (1600–4700)	X

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

X Suppressed to meet the confidentiality requirements of the *Statistics Act*.

Results for Polycyclic Aromatic Hydrocarbon Metabolites

BENZO[a]PYRENE

3-Hydroxybenzo[*a*]pyrene

3-Hydroxybenzo[*a*]pyrene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2294	99.91	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2378	99.96	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1163	100	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1188	100	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1131	99.82	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1190	99.92	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	420	99.76	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	453	100	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	466	99.79	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	468	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	473	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	486	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	328	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	340	99.71	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	340	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	300	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	267	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	331	100	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

3-Hydroxybenzo[a]pyrene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2284	99.91	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2377	99.96	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1159	100	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1188	100	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1125	99.82	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1189	99.92	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	419	99.76	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	452	100	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	464	99.79	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	468	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	471	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	486	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	326	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	340	99.71	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	338	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	300	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	266	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	331	100	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

CHRYSENE

2-Hydroxychrysene

2-Hydroxychrysene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2497	99.84	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2496	99.96	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1254	99.92	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1237	100	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1243	99.76	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1259	99.92	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	499	99.60	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	492	100	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	508	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	496	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	498	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	504	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	352	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	345	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	357	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	311	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	283	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	348	99.71	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

2-Hydroxychrysene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2487	99.84	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2495	99.96	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1250	99.92	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1237	100	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1237	99.76	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1258	99.92	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	498	99.60	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	491	100	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	506	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	496	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	496	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	504	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	350	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	345	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	355	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	311	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	282	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	348	99.71	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

3-Hydroxychrysene

3-Hydroxychrysene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2495	99.76	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2498	99.92	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1255	99.92	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1237	99.92	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1240	99.60	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1261	99.92	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	499	99.60	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	492	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	506	99.41	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	496	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	498	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	505	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	351	99.72	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	346	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	358	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	311	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	283	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	348	100	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

3-Hydroxychrysene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2485	99.76	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2497	99.92	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1251	99.92	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1237	99.92	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1234	99.60	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1260	99.92	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	498	99.60	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	491	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	504	99.41	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	496	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	496	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	505	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	349	99.72	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	346	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	356	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	311	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	282	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	348	100	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

4-Hydroxychrysene

4-Hydroxychrysene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2498	99.76	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2498	99.84	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1257	99.76	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1237	99.84	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1241	99.76	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1261	99.84	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	498	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	492	99.39	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	508	99.61	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	496	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	499	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	505	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	352	99.72	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	346	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	358	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	311	99.68	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	283	99.65	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	348	100	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

4-Hydroxychrysene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2488	99.76	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2497	99.84	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1253	99.76	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1237	99.84	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1235	99.76	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1260	99.84	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	497	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	491	99.39	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	506	99.61	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	496	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	497	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	505	100	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	350	99.72	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	346	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	356	100	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	311	99.68	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	282	99.65	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	348	100	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

6-Hydroxychrysene

6-Hydroxychrysene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2459	96.87	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2494	99.84	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1239	96.37	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1234	99.84	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1220	97.38	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1260	99.84	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	494	97.37	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	492	100	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	499	95.79	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	494	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	489	97.55	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	504	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	344	96.80	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	346	99.42	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	354	96.33	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	310	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	279	97.49	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	348	99.71	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

6-Hydroxychrysene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2449	96.87	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2493	99.84	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1235	96.37	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1234	99.84	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1214	97.38	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1259	99.84	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	493	97.37	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	491	100	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	497	95.79	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	494	100	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	487	97.55	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	504	99.80	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	342	96.80	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	346	99.42	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	352	96.33	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	310	100	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	278	97.49	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	348	99.71	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

FLUORANTHENE

3-Hydroxyfluoranthene

3-Hydroxyfluoranthene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2265	98.23	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2263	98.37	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1145	98.25	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1133	98.41	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1120	98.21	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1130	98.32	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	428	97.20	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	435	97.93	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	463	97.41	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	450	98.67	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	460	99.57	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	469	98.08	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	319	99.69	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	312	98.72	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	329	97.87	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	288	98.26	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	266	97.74	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	309	98.71	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

3-Hydroxyfluoranthene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2257	98.23	–	<LOD	<LOD	<LOD	<LOD
Total	3–79	3 (2012–2013)	2262	98.37	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	2 (2009–2011)	1142	98.25	–	<LOD	<LOD	<LOD	<LOD
Males	3–79	3 (2012–2013)	1133	98.41	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	2 (2009–2011)	1115	98.21	–	<LOD	<LOD	<LOD	<LOD
Females	3–79	3 (2012–2013)	1129	98.32	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	2 (2009–2011)	428	97.20	–	<LOD	<LOD	<LOD	<LOD
Total	3–5	3 (2012–2013)	434	97.93	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	2 (2009–2011)	462	97.41	–	<LOD	<LOD	<LOD	<LOD
Total	6–11	3 (2012–2013)	450	98.67	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	2 (2009–2011)	458	99.57	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	469	98.08	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	2 (2009–2011)	317	99.69	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	312	98.72	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	2 (2009–2011)	327	97.87	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	288	98.26	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	2 (2009–2011)	265	97.74	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	309	98.71	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

FLUORENE

2-Hydroxyfluorene

2-Hydroxyfluorene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2524	0	0.27 (0.24–0.29)	0.069 (0.058–0.080)	0.24 (0.21–0.27)	1.2 (0.95–1.5)	2.3 (1.7–2.8)
Total	3–79	3 (2012–2013)	2514	0	0.26 (0.24–0.29)	0.063 (0.051–0.075)	0.22 (0.20–0.24)	1.6 (1.4–1.8)	2.2 (1.6–2.7)
Males	3–79	2 (2009–2011)	1268	0	0.32 (0.27–0.38)	0.087 (0.071–0.10)	0.27 (0.23–0.32)	1.6[E] (0.95–2.3)	3.0 (2.1–4.0)
Males	3–79	3 (2012–2013)	1243	0	0.32 (0.29–0.35)	0.079 (0.058–0.10)	0.26 (0.23–0.29)	1.8 (1.5–2.0)	2.5 (1.7–3.2)
Females	3–79	2 (2009–2011)	1256	0	0.22 (0.21–0.25)	0.064 (0.051–0.076)	0.21 (0.17–0.26)	0.88[E] (0.54–1.2)	1.8 (1.3–2.3)
Females	3–79	3 (2012–2013)	1271	0	0.21 (0.17–0.27)	0.050 (0.035–0.065)	0.18 (0.14–0.21)	1.4[E] (0.84–2.0)	2.0 (1.4–2.6)
Total	3–5	2 (2009–2011)	506	0	0.17 (0.16–0.19)	0.069 (0.061–0.077)	0.18 (0.16–0.20)	0.37 (0.29–0.45)	0.47 (0.32–0.62)
Total	3–5	3 (2012–2013)	496	0	0.16 (0.13–0.18)	0.045 (0.029–0.060)	0.17 (0.13–0.21)	0.41 (0.32–0.51)	0.61 (0.41–0.81)
Total	6–11	2 (2009–2011)	511	0	0.22 (0.18–0.25)	0.088 (0.077–0.10)	0.24 (0.19–0.29)	0.48 (0.40–0.56)	0.57 (0.38–0.76)
Total	6–11	3 (2012–2013)	502	0	0.19 (0.17–0.21)	0.062 (0.045–0.078)	0.18 (0.16–0.21)	0.49 (0.38–0.60)	0.66 (0.53–0.78)
Total	12–19	2 (2009–2011)	506	0	0.26 (0.24–0.29)	0.098 (0.073–0.12)	0.26 (0.22–0.30)	0.73 (0.55–0.90)	1.1 (0.87–1.3)
Total	12–19	3 (2012–2013)	506	0	0.28 (0.23–0.33)	0.079 (0.063–0.095)	0.25 (0.19–0.31)	1.0[E] (0.52–1.5)	F
Total	20–39	2 (2009–2011)	355	0	0.30 (0.25–0.35)	0.085 (0.061–0.11)	0.28 (0.22–0.33)	1.3 (0.88–1.7)	2.2 (1.5–3.0)
Total	20–39	3 (2012–2013)	351	0	0.36 (0.29–0.46)	0.087 (0.066–0.11)	0.33 (0.27–0.39)	1.8 (1.3–2.4)	F
Total	40–59	2 (2009–2011)	359	0	0.30 (0.25–0.37)	0.066[E] (0.037–0.095)	0.25 (0.18–0.31)	1.9 (1.2–2.6)	3.3 (2.4–4.2)
Total	40–59	3 (2012–2013)	312	0	0.27 (0.21–0.34)	0.062 (0.044–0.081)	0.21 (0.16–0.27)	1.6 (1.2–2.0)	2.0[E] (1.3–2.8)
Total	60–79	2 (2009–2011)	287	0	0.21 (0.18–0.25)	0.054 (0.043–0.064)	0.18 (0.15–0.20)	1.1[E] (0.63–1.5)	2.3[E] (1.2–3.3)
Total	60–79	3 (2012–2013)	347	0	0.21 (0.16–0.27)	0.041[E] (0.020–0.062)	0.17 (0.14–0.20)	1.7[E] (0.82–2.7)	3.0[E] (1.3–4.8)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

2-Hydroxyfluorene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2514	0	0.27 (0.24–0.29)	0.10 (0.091–0.11)	0.21 (0.19–0.22)	1.1 (0.82–1.4)	1.9 (1.4–2.4)
Total	3–79	3 (2012–2013)	2513	0	0.27 (0.25–0.29)	0.095 (0.089–0.10)	0.20 (0.18–0.23)	1.4 (1.1–1.7)	2.0 (1.6–2.3)
Males	3–79	2 (2009–2011)	1264	0	0.27 (0.23–0.32)	0.096 (0.089–0.10)	0.21 (0.18–0.23)	1.4[E] (0.81–1.9)	2.4[E] (1.3–3.5)
Males	3–79	3 (2012–2013)	1243	0	0.27 (0.23–0.31)	0.083 (0.071–0.096)	0.20 (0.16–0.23)	1.5 (1.0–2.0)	1.9 (1.4–2.3)
Females	3–79	2 (2009–2011)	1250	0	0.26 (0.24–0.28)	0.12 (0.10–0.13)	0.21 (0.19–0.22)	0.87[E] (0.46–1.3)	1.7 (1.3–2.1)
Females	3–79	3 (2012–2013)	1270	0	0.27 (0.23–0.32)	0.10 (0.097–0.11)	0.21 (0.18–0.24)	1.4 (0.87–1.9)	2.0 (1.5–2.5)
Total	3–5	2 (2009–2011)	505	0	0.31 (0.28–0.34)	0.16 (0.14–0.18)	0.30 (0.26–0.33)	0.62 (0.46–0.78)	0.75 (0.63–0.88)
Total	3–5	3 (2012–2013)	495	0	0.30 (0.28–0.33)	0.16 (0.15–0.18)	0.28 (0.26–0.31)	0.57 (0.50–0.65)	0.77 (0.58–0.95)
Total	6–11	2 (2009–2011)	509	0	0.25 (0.22–0.28)	0.14 (0.12–0.16)	0.23 (0.19–0.26)	0.46 (0.37–0.55)	0.59 (0.41–0.78)
Total	6–11	3 (2012–2013)	502	0	0.24 (0.21–0.27)	0.12 (0.11–0.13)	0.22 (0.18–0.26)	0.55 (0.44–0.66)	0.67 (0.58–0.75)
Total	12–19	2 (2009–2011)	504	0	0.20 (0.18–0.22)	0.099 (0.092–0.11)	0.17 (0.16–0.18)	0.44 (0.33–0.55)	F
Total	12–19	3 (2012–2013)	506	0	0.21 (0.18–0.24)	0.099 (0.091–0.11)	0.17 (0.15–0.20)	0.58[E] (0.33–0.83)	1.1[E] (0.37–1.8)
Total	20–39	2 (2009–2011)	353	0	0.27 (0.22–0.33)	0.10 (0.080–0.12)	0.20 (0.17–0.24)	1.1[E] (0.56–1.6)	2.2[E] (1.0–3.3)
Total	20–39	3 (2012–2013)	351	0	0.28 (0.23–0.35)	0.096 (0.080–0.11)	0.22 (0.16–0.29)	1.3[E] (0.50–2.1)	1.7 (1.1–2.2)
Total	40–59	2 (2009–2011)	357	0	0.30 (0.26–0.36)	0.10 (0.081–0.12)	0.22 (0.18–0.25)	1.6 (1.1–2.1)	2.5 (1.6–3.3)
Total	40–59	3 (2012–2013)	312	0	0.31 (0.25–0.38)	0.090 (0.074–0.11)	0.23 (0.17–0.29)	1.7 (1.1–2.2)	2.2 (1.6–2.9)
Total	60–79	2 (2009–2011)	286	0	0.25 (0.22–0.28)	0.098 (0.092–0.10)	0.18 (0.16–0.20)	1.3[E] (0.78–1.8)	1.8 (1.3–2.2)
Total	60–79	3 (2012–2013)	347	0	0.24 (0.19–0.30)	0.084 (0.069–0.099)	0.16 (0.12–0.20)	1.6[E] (0.92–2.2)	2.2[E] (1.2–3.1)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

3-Hydroxyfluorene

3-Hydroxyfluorene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2523	0.04	0.096 (0.087–0.11)	0.022 (0.020–0.025)	0.081 (0.072–0.089)	0.64 (0.46–0.81)	1.3 (0.96–1.7)
Total	3–79	3 (2012–2013)	2513	0	0.10 (0.090–0.11)	0.019 (0.016–0.022)	0.082 (0.072–0.091)	0.95 (0.70–1.2)	1.3 (1.0–1.7)
Males	3–79	2 (2009–2011)	1266	0	0.12 (0.099–0.14)	0.028 (0.024–0.032)	0.096 (0.080–0.11)	0.79[E] (0.34–1.2)	1.7[E] (1.1–2.3)
Males	3–79	3 (2012–2013)	1242	0	0.13 (0.11–0.15)	0.024 (0.016–0.031)	0.099 (0.093–0.11)	1.1 (0.75–1.4)	1.5 (1.1–1.9)
Females	3–79	2 (2009–2011)	1257	0.08	0.078 (0.070–0.086)	0.019 (0.015–0.023)	0.071 (0.058–0.083)	0.38[E] (0.15–0.60)	0.99[E] (0.59–1.4)
Females	3–79	3 (2012–2013)	1271	0	0.078 (0.061–0.10)	0.016 (0.012–0.020)	0.063 (0.043–0.083)	0.68[E] (0.39–0.98)	1.2 (0.84–1.6)
Total	3–5	2 (2009–2011)	507	0	0.069 (0.063–0.077)	0.025 (0.020–0.030)	0.071 (0.061–0.080)	0.16 (0.10–0.22)	0.23[E] (0.099–0.37)
Total	3–5	3 (2012–2013)	496	0	0.064 (0.054–0.075)	0.016[E] (0.0076–0.024)	0.068 (0.052–0.083)	0.18 (0.13–0.23)	0.26 (0.18–0.34)
Total	6–11	2 (2009–2011)	511	0	0.084 (0.069–0.10)	0.033 (0.028–0.038)	0.087 (0.066–0.11)	0.22 (0.17–0.27)	0.26 (0.19–0.32)
Total	6–11	3 (2012–2013)	501	0	0.077 (0.067–0.089)	0.023 (0.016–0.031)	0.080 (0.073–0.087)	0.25[E] (0.16–0.35)	0.36[E] (0.21–0.52)
Total	12–19	2 (2009–2011)	506	0.20	0.093 (0.082–0.11)	0.029 (0.022–0.036)	0.093 (0.081–0.11)	0.31[E] (0.19–0.42)	0.53[E] (0.33–0.73)
Total	12–19	3 (2012–2013)	506	0	0.10 (0.088–0.12)	0.028 (0.019–0.037)	0.088 (0.074–0.10)	0.59[E] (0.24–0.93)	0.94[E] (0.31–1.6)
Total	20–39	2 (2009–2011)	354	0	0.11 (0.092–0.13)	0.025 (0.018–0.032)	0.10 (0.079–0.12)	0.75[E] (0.39–1.1)	1.1[E] (0.70–1.5)
Total	20–39	3 (2012–2013)	351	0	0.14 (0.11–0.18)	0.026[E] (0.014–0.038)	0.10 (0.089–0.11)	1.1 (0.77–1.4)	1.4[E] (0.72–2.0)
Total	40–59	2 (2009–2011)	358	0	0.11 (0.090–0.14)	0.020[E] (0.011–0.030)	0.080 (0.062–0.099)	1.2[E] (0.66–1.8)	2.2 (1.5–3.0)
Total	40–59	3 (2012–2013)	311	0	0.11 (0.079–0.14)	0.018[E] (0.011–0.025)	0.078 (0.052–0.10)	0.99[E] (0.54–1.4)	1.3[E] (0.76–1.8)
Total	60–79	2 (2009–2011)	287	0	0.067 (0.056–0.079)	0.018 (0.014–0.022)	0.050 (0.043–0.057)	0.44[E] (0.24–0.64)	1.1[E] (0.58–1.7)
Total	60–79	3 (2012–2013)	348	0	0.074 (0.057–0.095)	0.012[E] (0.0050–0.018)	0.052 (0.037–0.068)	0.95[E] (0.28–1.6)	1.8[E] (0.83–2.8)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

3-Hydroxyfluorene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2513	0.04	*0.096* (0.087–0.11)	*0.032* (0.031–0.034)	*0.070* (0.063–0.077)	*0.68*[E] (0.41–0.95)	*1.1* (0.84–1.3)
Total	3–79	3 (2012–2013)	2512	0	0.10 (0.095–0.11)	0.029 (0.025–0.032)	0.072 (0.063–0.081)	0.83 (0.64–1.0)	1.2 (0.94–1.4)
Males	3–79	2 (2009–2011)	1262	0	0.10 (0.086–0.12)	0.031 (0.029–0.033)	0.074 (0.060–0.088)	0.81[E] (0.47–1.1)	1.4[E] (0.88–1.9)
Males	3–79	3 (2012–2013)	1242	0	0.11 (0.090–0.13)	0.026 (0.021–0.030)	0.077 (0.062–0.091)	0.84 (0.64–1.0)	1.0 (0.82–1.3)
Females	3–79	2 (2009–2011)	1251	0.08	0.089 (0.081–0.098)	0.035 (0.031–0.038)	0.069 (0.063–0.074)	F	0.99 (0.73–1.3)
Females	3–79	3 (2012–2013)	1270	0	0.10 (0.084–0.12)	0.032 (0.028–0.036)	0.071 (0.061–0.082)	0.79[E] (0.38–1.2)	1.2 (0.92–1.6)
Total	3–5	2 (2009–2011)	506	0	0.12 (0.11–0.14)	0.061 (0.057–0.066)	0.11 (0.089–0.13)	0.25 (0.19–0.30)	0.32[E] (0.16–0.49)
Total	3–5	3 (2012–2013)	495	0	0.12 (0.11–0.14)	0.062 (0.053–0.072)	0.11 (0.10–0.13)	0.27 (0.23–0.30)	0.40 (0.27–0.53)
Total	6–11	2 (2009–2011)	509	0	0.098 (0.085–0.11)	0.050 (0.042–0.057)	0.094 (0.080–0.11)	0.20 (0.15–0.25)	0.26 (0.20–0.33)
Total	6–11	3 (2012–2013)	501	0	0.099 (0.083–0.12)	0.044 (0.038–0.050)	0.085 (0.070–0.10)	0.25[E] (0.11–0.38)	0.43[E] (0.23–0.62)
Total	12–19	2 (2009–2011)	504	0.20	0.071 (0.062–0.082)	0.031 (0.027–0.035)	0.063 (0.055–0.070)	0.22[E] (0.11–0.33)	F
Total	12–19	3 (2012–2013)	506	0	0.079 (0.069–0.090)	0.033 (0.028–0.038)	0.065 (0.056–0.074)	F	0.61[E] (0.25–0.96)
Total	20–39	2 (2009–2011)	352	0	0.099 (0.081–0.12)	0.033 (0.027–0.038)	0.070 (0.056–0.083)	0.66[E] (0.28–1.0)	1.1[E] (0.47–1.7)
Total	20–39	3 (2012–2013)	351	0	0.11 (0.083–0.14)	0.032 (0.026–0.037)	0.079 (0.060–0.098)	0.78[E] (0.36–1.2)	0.99 (0.69–1.3)
Total	40–59	2 (2009–2011)	356	0	0.11 (0.092–0.14)	0.033 (0.028–0.038)	0.072 (0.052–0.093)	1.0 (0.72–1.4)	1.6 (1.2–2.0)
Total	40–59	3 (2012–2013)	311	0	0.12 (0.095–0.16)	0.027 (0.019–0.035)	0.078 (0.058–0.099)	1.1 (0.80–1.4)	1.5 (1.0–1.9)
Total	60–79	2 (2009–2011)	286	0	0.078 (0.067–0.090)	0.028 (0.025–0.031)	0.055 (0.047–0.063)	0.58[E] (0.23–0.92)	0.96 (0.81–1.1)
Total	60–79	3 (2012–2013)	348	0	0.085 (0.067–0.11)	0.025 (0.022–0.028)	0.053 (0.041–0.064)	0.82[E] (0.48–1.2)	1.4 (1.0–1.8)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

9-Hydroxyfluorene

9-Hydroxyfluorene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2514	0	0.16 (0.15–0.17)	0.051 (0.045–0.058)	0.16 (0.14–0.17)	0.46 (0.37–0.55)	0.66 (0.57–0.76)
Total	3–79	3 (2012–2013)	2499	0	0.15 (0.13–0.17)	0.045 (0.037–0.053)	0.14 (0.13–0.16)	0.53 (0.44–0.61)	0.71 (0.60–0.82)
Males	3–79	2 (2009–2011)	1260	0	0.17 (0.15–0.20)	0.057 (0.048–0.066)	0.17 (0.13–0.20)	0.58 (0.46–0.70)	0.73 (0.61–0.85)
Males	3–79	3 (2012–2013)	1238	0	0.17 (0.15–0.18)	0.051 (0.037–0.065)	0.16 (0.15–0.17)	0.58 (0.46–0.71)	0.73 (0.62–0.85)
Females	3–79	2 (2009–2011)	1254	0	0.15 (0.13–0.16)	0.048 (0.040–0.055)	0.14 (0.13–0.16)	0.39 (0.33–0.46)	0.49 (0.32–0.66)
Females	3–79	3 (2012–2013)	1261	0	0.13 (0.11–0.16)	0.041 (0.031–0.050)	0.13 (0.10–0.16)	0.49 (0.36–0.63)	0.65 (0.43–0.86)
Total	3–5	2 (2009–2011)	505	0	0.098 (0.088–0.11)	0.040 (0.032–0.048)	0.098 (0.086–0.11)	0.24 (0.19–0.29)	0.30 (0.25–0.34)
Total	3–5	3 (2012–2013)	490	0	0.084 (0.070–0.099)	0.029 (0.022–0.036)	0.085 (0.065–0.10)	0.22 (0.15–0.28)	0.29 (0.21–0.37)
Total	6–11	2 (2009–2011)	509	0	0.11 (0.091–0.13)	0.042 (0.032–0.051)	0.11 (0.086–0.13)	0.29 (0.21–0.37)	0.38 (0.28–0.47)
Total	6–11	3 (2012–2013)	498	0	0.091 (0.082–0.10)	0.038 (0.030–0.045)	0.081 (0.072–0.090)	0.24 (0.19–0.30)	0.34 (0.26–0.42)
Total	12–19	2 (2009–2011)	501	0	0.15 (0.13–0.17)	0.060 (0.047–0.073)	0.14 (0.12–0.17)	0.38 (0.32–0.45)	0.49 (0.35–0.62)
Total	12–19	3 (2012–2013)	505	0	0.13 (0.12–0.15)	0.047 (0.039–0.055)	0.13 (0.11–0.15)	0.38[E] (0.23–0.54)	0.58 (0.40–0.77)
Total	20–39	2 (2009–2011)	355	0	0.17 (0.15–0.20)	0.058 (0.041–0.076)	0.18 (0.15–0.21)	0.52 (0.34–0.70)	0.66 (0.53–0.79)
Total	20–39	3 (2012–2013)	351	0	0.20 (0.17–0.22)	0.065[E] (0.041–0.089)	0.19 (0.13–0.25)	0.54[E] (0.34–0.74)	0.77 (0.60–0.93)
Total	40–59	2 (2009–2011)	358	0	0.17 (0.15–0.20)	0.048[E] (0.029–0.066)	0.17 (0.13–0.20)	0.51 (0.34–0.68)	0.80 (0.55–1.1)
Total	40–59	3 (2012–2013)	310	0	0.17 (0.13–0.20)	0.045 (0.035–0.056)	0.15 (0.11–0.19)	0.58 (0.49–0.68)	0.76 (0.56–0.95)
Total	60–79	2 (2009–2011)	286	0	0.16 (0.14–0.18)	0.052 (0.046–0.058)	0.15 (0.13–0.17)	0.48 (0.31–0.66)	0.73[E] (0.46–1.0)
Total	60–79	3 (2012–2013)	345	0	0.13 (0.11–0.16)	0.037[E] (0.018–0.056)	0.12 (0.10–0.15)	0.49[E] (0.28–0.71)	0.71 (0.48–0.94)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

9-Hydroxyfluorene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2504	0	0.16 (0.15–0.17)	0.059 (0.053–0.066)	0.14 (0.13–0.16)	0.43 (0.35–0.52)	0.62 (0.51–0.72)
Total	3–79	3 (2012–2013)	2498	0	0.16 (0.14–0.17)	0.055 (0.048–0.062)	0.14 (0.13–0.16)	0.48 (0.43–0.52)	0.72 (0.64–0.81)
Males	3–79	2 (2009–2011)	1256	0	0.15 (0.13–0.17)	0.055 (0.047–0.064)	0.13 (0.11–0.15)	0.50 (0.35–0.64)	0.62 (0.50–0.73)
Males	3–79	3 (2012–2013)	1238	0	0.14 (0.12–0.16)	0.049 (0.041–0.058)	0.13 (0.10–0.15)	0.46 (0.35–0.56)	0.62 (0.48–0.76)
Females	3–79	2 (2009–2011)	1248	0	0.17 (0.15–0.19)	0.065 (0.058–0.071)	0.15 (0.13–0.18)	0.42 (0.34–0.50)	0.62 (0.44–0.80)
Females	3–79	3 (2012–2013)	1260	0	0.17 (0.15–0.20)	0.061 (0.050–0.071)	0.15 (0.14–0.17)	0.57[E] (0.35–0.80)	0.83 (0.63–1.0)
Total	3–5	2 (2009–2011)	504	0	0.17 (0.15–0.19)	0.068 (0.053–0.083)	0.17 (0.15–0.20)	0.41 (0.31–0.50)	0.62 (0.42–0.81)
Total	3–5	3 (2012–2013)	489	0	0.16 (0.14–0.18)	0.065 (0.058–0.072)	0.15 (0.12–0.18)	0.44 (0.36–0.52)	0.54 (0.45–0.64)
Total	6–11	2 (2009–2011)	507	0	0.13 (0.11–0.15)	0.056 (0.049–0.064)	0.11 (0.090–0.13)	0.31 (0.22–0.40)	0.42[E] (0.20–0.64)
Total	6–11	3 (2012–2013)	498	0	0.12 (0.10–0.13)	0.046[E] (0.029–0.063)	0.11 (0.096–0.13)	0.27 (0.22–0.31)	0.43 (0.30–0.56)
Total	12–19	2 (2009–2011)	499	0	0.11 (0.097–0.13)	0.048 (0.039–0.056)	0.10 (0.083–0.12)	0.27 (0.19–0.35)	0.37[E] (0.16–0.57)
Total	12–19	3 (2012–2013)	505	0	0.10 (0.087–0.12)	0.042 (0.035–0.048)	0.088 (0.077–0.098)	0.25 (0.17–0.34)	0.37[E] (0.22–0.51)
Total	20–39	2 (2009–2011)	353	0	0.15 (0.13–0.18)	0.060 (0.049–0.070)	0.14 (0.11–0.16)	0.35[E] (0.15–0.54)	0.56 (0.39–0.73)
Total	20–39	3 (2012–2013)	351	0	0.15 (0.13–0.18)	0.055 (0.038–0.072)	0.13 (0.092–0.16)	0.51 (0.33–0.69)	0.68 (0.52–0.84)
Total	40–59	2 (2009–2011)	356	0	0.17 (0.16–0.19)	0.064 (0.055–0.073)	0.16 (0.14–0.18)	0.52 (0.40–0.63)	0.64[E] (0.40–0.88)
Total	40–59	3 (2012–2013)	310	0	0.19 (0.16–0.23)	0.063 (0.043–0.084)	0.20 (0.15–0.24)	0.62[E] (0.38–0.86)	0.81[E] (0.52–1.1)
Total	60–79	2 (2009–2011)	285	0	0.19 (0.16–0.22)	0.065 (0.044–0.086)	0.16 (0.13–0.19)	0.52 (0.34–0.70)	0.77 (0.56–0.98)
Total	60–79	3 (2012–2013)	345	0	0.15 (0.13–0.18)	0.056 (0.038–0.073)	0.15 (0.13–0.17)	0.45 (0.31–0.60)	0.64 (0.52–0.76)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

NAPHTHALENE

1-Hydroxynaphthalene

1-Hydroxynaphthalene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2522	0.79	1.5 (1.3–1.7)	0.27 (0.18–0.37)	1.3 (1.1–1.5)	9.9 (7.7–12)	15 (12–19)
Total	3–79	3 (2012–2013)	2511	2.27	1.0 (0.89–1.2)	0.19 (0.16–0.23)	0.85 (0.68–1.0)	7.8 (6.6–9.0)	11 (8.2–14)
Males	3–79	2 (2009–2011)	1267	0.30	1.6 (1.3–2.0)	0.29[E] (0.16–0.42)	1.3 (1.0–1.7)	11 (9.5–14)	17 (13–21)
Males	3–79	3 (2012–2013)	1241	1.69	1.3 (1.1–1.6)	0.24 (0.18–0.30)	1.1 (0.75–1.4)	8.3 (6.4–10)	12[E] (7.2–16)
Females	3–79	2 (2009–2011)	1255	1.20	1.4 (1.2–1.6)	0.26[E] (0.14–0.37)	1.2 (1.1–1.4)	6.2[E] (2.4–10)	F
Females	3–79	3 (2012–2013)	1270	2.83	0.80 (0.57–1.1)	0.18 (0.12–0.23)	0.72 (0.48–0.97)	6.6[E] (3.7–9.4)	9.9 (6.8–13)
Total	3–5	2 (2009–2011)	506	0.40	1.4 (1.2–1.6)	0.43 (0.35–0.50)	1.2 (1.0–1.4)	5.4[E] (3.3–7.5)	F
Total	3–5	3 (2012–2013)	495	1.82	0.69 (0.54–0.88)	0.19[E] (0.12–0.26)	0.68 (0.53–0.82)	2.9 (2.1–3.8)	4.2 (2.7–5.7)
Total	6–11	2 (2009–2011)	511	0.39	0.95 (0.79–1.1)	0.25[E] (<LOD–0.40)	0.92 (0.73–1.1)	2.8 (2.1–3.5)	4.0 (2.9–5.2)
Total	6–11	3 (2012–2013)	502	2.19	0.75 (0.63–0.90)	0.23 (0.16–0.30)	0.68 (0.55–0.82)	3.0[E] (1.8–4.2)	F
Total	12–19	2 (2009–2011)	505	1.39	1.2 (0.98–1.4)	0.28[E] (0.14–0.41)	1.0 (0.83–1.2)	4.1[E] (2.1–6.1)	F
Total	12–19	3 (2012–2013)	505	2.57	0.95 (0.70–1.3)	0.19[E] (0.12–0.26)	0.74 (0.50–0.98)	7.2 (4.8–9.6)	F
Total	20–39	2 (2009–2011)	354	1.13	1.4 (1.1–1.7)	0.29[E] (0.14–0.43)	1.4 (1.0–1.7)	7.1[E] (4.5–9.7)	13 (9.9–15)
Total	20–39	3 (2012–2013)	350	2.29	1.2 (0.84–1.6)	0.20[E] (0.12–0.28)	0.91[E] (0.56–1.3)	8.4[E] (5.2–12)	12[E] (5.4–18)
Total	40–59	2 (2009–2011)	359	1.11	1.7 (1.3–2.2)	0.28[E] (0.11–0.44)	1.3 (0.97–1.7)	13 (10–15)	19[E] (11–27)
Total	40–59	3 (2012–2013)	311	3.22	1.1[E] (0.74–1.6)	0.18[E] (0.10–0.25)	0.97[E] (0.27–1.7)	8.1 (5.2–11)	11 (7.1–15)
Total	60–79	2 (2009–2011)	287	0.35	1.7 (1.3–2.2)	0.25[E] (0.12–0.39)	1.6 (1.2–1.9)	F	F
Total	60–79	3 (2012–2013)	348	1.72	0.99 (0.77–1.3)	0.21[E] (0.13–0.28)	0.86 (0.68–1.0)	7.0 (4.6–9.4)	13[E] (7.5–19)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

1-Hydroxynaphthalene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2512	0.79	1.5 (1.3–1.7)	0.32 (0.23–0.41)	1.2 (1.0–1.4)	9.5 (7.0–12)	15 (12–18)
Total	3–79	3 (2012–2013)	2510	2.27	1.1 (0.91–1.2)	0.20 (0.16–0.25)	0.99 (0.81–1.2)	6.9 (5.4–8.4)	10 (7.7–12)
Males	3–79	2 (2009–2011)	1263	0.39	1.4 (1.1–1.7)	0.27 (0.18–0.36)	1.1 (0.84–1.3)	9.8[E] (6.0–14)	16 (12–20)
Males	3–79	3 (2012–2013)	1241	1.69	1.1 (0.85–1.4)	0.20 (0.15–0.25)	1.0 (0.66–1.3)	7.6 (5.0–10)	9.2 (6.8–12)
Females	3–79	2 (2009–2011)	1249	1.20	1.6 (1.4–1.8)	0.41 (0.31–0.50)	1.4 (1.2–1.5)	8.7 (5.6–12)	F
Females	3–79	3 (2012–2013)	1269	2.83	1.0 (0.77–1.4)	0.23[E] (0.14–0.31)	0.97 (0.66–1.3)	6.5[E] (3.1–9.9)	12 (8.3–15)
Total	3–5	2 (2009–2011)	505	0.40	2.5 (2.2–2.9)	0.74 (0.53–0.94)	2.2 (1.9–2.6)	8.4[E] (3.5–13)	16[E] (5.7–25)
Total	3–5	3 (2012–2013)	494	1.82	1.3 (1.1–1.6)	0.46 (0.34–0.57)	1.2 (1.1–1.4)	4.9 (3.6–6.2)	6.7 (4.8–8.6)
Total	6–11	2 (2009–2011)	509	0.39	1.1 (0.92–1.3)	0.35[E] (0.22–0.48)	1.0 (0.85–1.1)	3.4 (2.5–4.2)	4.9 (3.4–6.5)
Total	6–11	3 (2012–2013)	502	2.19	0.96 (0.76–1.2)	0.30 (0.26–0.34)	0.79 (0.61–0.98)	4.1[E] (2.5–5.8)	5.8[E] (3.2–8.5)
Total	12–19	2 (2009–2011)	503	1.39	0.90 (0.75–1.1)	0.26 (0.18–0.35)	0.83 (0.72–0.94)	3.5[E] (1.9–5.0)	F
Total	12–19	3 (2012–2013)	505	2.57	0.72 (0.56–0.92)	0.15[E] (0.089–0.22)	0.67 (0.46–0.88)	4.7[E] (1.3–8.2)	F
Total	20–39	2 (2009–2011)	352	1.13	1.3 (0.97–1.7)	0.24[E] (0.15–0.33)	1.2 (0.79–1.7)	8.2[E] (3.8–13)	13[E] (7.2–18)
Total	20–39	3 (2012–2013)	350	2.29	0.89 (0.62–1.3)	0.17[E] (0.074–0.26)	0.78[E] (0.40–1.2)	5.9[E] (2.1–9.6)	9.1[E] (5.7–13)
Total	40–59	2 (2009–2011)	357	1.11	1.7 (1.3–2.1)	0.37[E] (0.19–0.54)	1.3[E] (0.74–1.9)	13[E] (8.3–18)	18[E] (10–27)
Total	40–59	3 (2012–2013)	311	3.22	1.3 (0.88–1.8)	0.23[E] (0.11–0.36)	1.3[E] (0.80–1.8)	9.8 (6.3–13)	13 (8.6–17)
Total	60–79	2 (2009–2011)	286	0.35	2.0 (1.6–2.5)	0.50 (0.36–0.65)	1.5 (1.2–1.8)	F	F
Total	60–79	3 (2012–2013)	348	1.72	1.1 (0.93–1.4)	0.24[E] (0.13–0.36)	1.0 (0.70–1.3)	6.5[E] (4.1–8.9)	11 (8.0–14)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

2-Hydroxynaphthalene

2-Hydroxynaphthalene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2503	0	3.8 (3.4–4.4)	0.84 (0.68–1.0)	3.8 (3.2–4.4)	17 (14–20)	24 (18–30)
Total	3–79	3 (2012–2013)	2506	0	4.1 (3.6–4.6)	0.93 (0.79–1.1)	4.0 (3.4–4.6)	18 (14–22)	26 (22–30)
Males	3–79	2 (2009–2011)	1251	0	4.0 (3.3–4.9)	0.99 (0.81–1.2)	3.9 (3.1–4.8)	19 (13–26)	26 (19–32)
Males	3–79	3 (2012–2013)	1239	0	4.6 (4.0–5.3)	0.96 (0.80–1.1)	4.4 (3.7–5.2)	20 (13–27)	30 (22–38)
Females	3–79	2 (2009–2011)	1252	0	3.7 (3.2–4.2)	0.63[E] (0.40–0.87)	3.5 (3.0–4.1)	17 (13–20)	23[E] (13–32)
Females	3–79	3 (2012–2013)	1267	0	3.7 (2.9–4.7)	0.88 (0.65–1.1)	3.7 (2.8–4.6)	16 (12–20)	23 (18–28)
Total	3–5	2 (2009–2011)	499	0	3.3 (2.8–3.8)	1.1 (0.91–1.2)	3.0 (2.4–3.6)	11[E] (5.8–15)	17[E] (8.9–24)
Total	3–5	3 (2012–2013)	494	0	3.2 (2.6–4.0)	0.72 (0.50–0.93)	3.4 (2.7–4.1)	12[E] (6.7–16)	19[E] (12–26)
Total	6–11	2 (2009–2011)	509	0	3.2 (2.6–4.0)	1.1 (0.82–1.3)	3.0 (2.3–3.8)	8.8[E] (4.7–13)	F
Total	6–11	3 (2012–2013)	498	0	3.2 (2.8–3.7)	0.84 (0.60–1.1)	3.2 (2.6–3.8)	10[E] (6.3–14)	14 (9.6–18)
Total	12–19	2 (2009–2011)	503	0	4.4 (3.8–5.0)	1.1 (0.93–1.3)	4.4 (3.5–5.3)	15 (9.6–20)	24 (19–29)
Total	12–19	3 (2012–2013)	505	0	5.3 (4.6–6.2)	1.2 (0.77–1.7)	5.0 (3.8–6.2)	23 (15–32)	36 (30–43)
Total	20–39	2 (2009–2011)	352	0	4.4 (3.5–5.5)	0.88[E] (0.53–1.2)	4.8 (3.8–5.9)	17 (13–21)	22 (18–27)
Total	20–39	3 (2012–2013)	350	0	5.2 (4.3–6.3)	1.2 (0.91–1.6)	5.6 (3.6–7.6)	18[E] (9.7–26)	26[E] (15–37)
Total	40–59	2 (2009–2011)	354	0	4.1 (3.1–5.4)	0.75[E] (0.27–1.2)	3.7[E] (2.1–5.2)	21[E] (13–30)	31 (20–42)
Total	40–59	3 (2012–2013)	311	0	4.2 (3.5–5.2)	0.97 (0.77–1.2)	4.1 (2.7–5.5)	18[E] (9.6–26)	28 (21–35)
Total	60–79	2 (2009–2011)	286	0	2.8 (2.4–3.3)	0.58[E] (0.31–0.86)	2.5 (1.9–3.2)	12[E] (7.5–16)	22 (19–26)
Total	60–79	3 (2012–2013)	348	0	3.0 (2.5–3.5)	0.73 (0.48–0.97)	2.9 (2.4–3.4)	14[E] (6.4–22)	24 (15–33)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

2-Hydroxynaphthalene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2493	0	3.8 (3.4–4.3)	1.2 (1.0–1.3)	3.4 (2.9–4.0)	15 (13–17)	20 (17–22)
Total	3–79	3 (2012–2013)	2505	0	4.3 (3.9–4.7)	1.3 (1.1–1.5)	4.1 (3.4–4.7)	14 (12–17)	19 (16–21)
Males	3–79	2 (2009–2011)	1247	0	3.5 (2.9–4.1)	1.0 (0.94–1.2)	2.9 (2.3–3.5)	14 (10–19)	20 (14–25)
Males	3–79	3 (2012–2013)	1239	0	3.9 (3.3–4.5)	1.1 (0.91–1.4)	3.5 (2.6–4.4)	13 (9.7–17)	18 (15–21)
Females	3–79	2 (2009–2011)	1246	0	4.3 (3.9–4.6)	1.4 (1.1–1.7)	3.8 (3.3–4.2)	15 (12–18)	20 (16–23)
Females	3–79	3 (2012–2013)	1266	0	4.7 (4.0–5.5)	1.6 (1.3–1.8)	4.4 (3.4–5.3)	15 (13–17)	19 (16–23)
Total	3–5	2 (2009–2011)	498	0	5.9 (5.1–6.8)	2.1 (1.9–2.2)	5.0 (4.2–5.9)	16 (11–21)	23[E] (13–33)
Total	3–5	3 (2012–2013)	493	0	6.3 (5.4–7.3)	2.2 (1.7–2.7)	5.8 (4.8–6.8)	19 (13–25)	27[E] (17–37)
Total	6–11	2 (2009–2011)	507	0	3.8 (3.2–4.5)	1.5 (1.3–1.8)	3.6 (2.6–4.6)	9.4 (6.8–12)	12[E] (5.1–19)
Total	6–11	3 (2012–2013)	498	0	4.1 (3.4–5.0)	1.5 (1.1–1.9)	3.9 (3.3–4.5)	11 (8.3–14)	13[E] (4.5–22)
Total	12–19	2 (2009–2011)	501	0	3.4 (3.0–3.9)	1.1 (1.0–1.3)	3.1 (2.6–3.6)	9.9 (7.6–12)	13 (10–16)
Total	12–19	3 (2012–2013)	505	0	4.1 (3.7–4.4)	1.4 (1.1–1.7)	3.6 (3.2–4.0)	12 (9.6–15)	15 (11–20)
Total	20–39	2 (2009–2011)	350	0	3.9 (3.3–4.7)	1.2 (0.93–1.4)	3.4 (2.5–4.4)	15 (10–19)	19 (15–23)
Total	20–39	3 (2012–2013)	350	0	4.0 (3.4–4.8)	1.3[E] (0.80–1.8)	4.0 (3.1–4.9)	11 (8.7–13)	14 (11–18)
Total	40–59	2 (2009–2011)	352	0	4.1 (3.3–5.2)	1.0[E] (0.64–1.4)	3.7 (2.8–4.7)	19 (14–25)	25 (20–30)
Total	40–59	3 (2012–2013)	311	0	5.0 (4.1–6.0)	1.4 (1.1–1.8)	5.1 (3.4–6.7)	18 (14–21)	21 (17–25)
Total	60–79	2 (2009–2011)	285	0	3.3 (2.9–3.7)	1.1 (1.0–1.3)	2.6 (2.1–3.1)	14 (9.7–18)	18 (15–20)
Total	60–79	3 (2012–2013)	348	0	3.4 (3.0–3.9)	1.0 (0.77–1.2)	3.2 (2.7–3.6)	12 (8.1–16)	17 (13–21)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

PHENANTHRENE

1-Hydroxyphenanthrene

1-Hydroxyphenanthrene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2522	0.04	0.15 (0.14–0.17)	0.049 (0.042–0.056)	0.15 (0.14–0.17)	0.47 (0.38–0.57)	0.69 (0.53–0.84)
Total	3–79	3 (2012–2013)	2505	0.04	0.15 (0.13–0.16)	0.040 (0.028–0.051)	0.13 (0.12–0.15)	0.50 (0.38–0.62)	0.73 (0.58–0.88)
Males	3–79	2 (2009–2011)	1268	0	0.16 (0.14–0.19)	0.054 (0.046–0.062)	0.16 (0.14–0.19)	0.50 (0.38–0.62)	0.73 (0.57–0.90)
Males	3–79	3 (2012–2013)	1241	0.08	0.16 (0.14–0.18)	0.051 (0.038–0.064)	0.15 (0.13–0.17)	0.48 (0.37–0.59)	0.78 (0.54–1.0)
Females	3–79	2 (2009–2011)	1254	0.08	0.14 (0.13–0.16)	0.041 (0.032–0.049)	0.14 (0.12–0.16)	0.42 (0.30–0.54)	0.66[E] (0.40–0.92)
Females	3–79	3 (2012–2013)	1264	0	0.13 (0.11–0.16)	0.035 (0.026–0.044)	0.13 (0.096–0.15)	0.51 (0.35–0.66)	0.67 (0.56–0.79)
Total	3–5	2 (2009–2011)	505	0	0.11 (0.097–0.13)	0.044 (0.037–0.051)	0.10 (0.094–0.12)	0.29 (0.23–0.36)	0.34 (0.26–0.42)
Total	3–5	3 (2012–2013)	490	0	0.092 (0.079–0.11)	0.031 (0.021–0.042)	0.097 (0.086–0.11)	0.27 (0.22–0.31)	0.36 (0.30–0.42)
Total	6–11	2 (2009–2011)	510	0	0.12 (0.11–0.14)	0.046 (0.039–0.054)	0.12 (0.097–0.14)	0.30 (0.21–0.39)	0.42 (0.32–0.51)
Total	6–11	3 (2012–2013)	501	0.20	0.11 (0.094–0.12)	0.031[E] (0.015–0.047)	0.11 (0.092–0.12)	0.26 (0.21–0.30)	0.36 (0.30–0.42)
Total	12–19	2 (2009–2011)	506	0	0.15 (0.14–0.17)	0.058 (0.044–0.073)	0.15 (0.13–0.18)	0.44 (0.29–0.59)	0.55 (0.43–0.67)
Total	12–19	3 (2012–2013)	505	0	0.15 (0.13–0.18)	0.050 (0.035–0.066)	0.14 (0.11–0.17)	0.53 (0.40–0.65)	0.76[E] (0.41–1.1)
Total	20–39	2 (2009–2011)	355	0	0.16 (0.14–0.18)	0.049 (0.033–0.066)	0.17 (0.15–0.19)	0.49 (0.35–0.63)	0.64[E] (0.41–0.87)
Total	20–39	3 (2012–2013)	350	0	0.18 (0.16–0.21)	0.052 (0.036–0.068)	0.20 (0.14–0.26)	0.46[E] (0.27–0.65)	0.70[E] (0.28–1.1)
Total	40–59	2 (2009–2011)	359	0	0.16 (0.14–0.19)	0.052[E] (0.031–0.073)	0.16 (0.12–0.19)	0.51[E] (0.32–0.71)	0.77 (0.58–0.97)
Total	40–59	3 (2012–2013)	311	0	0.14 (0.12–0.17)	0.036[E] (0.018–0.055)	0.13 (0.095–0.16)	0.51[E] (0.30–0.73)	0.69[E] (0.43–0.94)
Total	60–79	2 (2009–2011)	287	0.35	0.15 (0.13–0.17)	0.038 (0.026–0.050)	0.16 (0.13–0.18)	0.50 (0.37–0.64)	0.81 (0.53–1.1)
Total	60–79	3 (2012–2013)	348	0	0.14 (0.11–0.17)	0.032[E] (0.0094–0.054)	0.12 (0.085–0.15)	0.68 (0.53–0.82)	0.85[E] (0.37–1.3)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

1-Hydroxyphenanthrene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2512	0.04	0.15 (0.14–0.16)	0.069 (0.064–0.075)	0.14 (0.12–0.15)	0.37 (0.31–0.44)	0.52 (0.41–0.63)
Total	3–79	3 (2012–2013)	2504	0.04	0.15 (0.14–0.16)	0.059 (0.050–0.068)	0.14 (0.13–0.15)	0.39 (0.31–0.46)	0.59 (0.47–0.72)
Males	3–79	2 (2009–2011)	1264	0	0.14 (0.13–0.16)	0.060 (0.051–0.069)	0.13 (0.11–0.15)	0.35 (0.27–0.43)	0.51 (0.39–0.64)
Males	3–79	3 (2012–2013)	1241	0.08	0.13 (0.12–0.15)	0.052 (0.042–0.061)	0.13 (0.11–0.14)	0.34 (0.29–0.39)	0.53[E] (0.32–0.75)
Females	3–79	2 (2009–2011)	1248	0.08	0.17 (0.15–0.18)	0.078 (0.066–0.090)	0.15 (0.13–0.16)	0.39 (0.31–0.46)	0.55 (0.40–0.71)
Females	3–79	3 (2012–2013)	1263	0	0.17 (0.15–0.19)	0.070 (0.058–0.081)	0.15 (0.13–0.17)	0.47 (0.36–0.57)	0.63 (0.52–0.74)
Total	3–5	2 (2009–2011)	504	0	0.20 (0.17–0.22)	0.094 (0.077–0.11)	0.18 (0.16–0.21)	0.40 (0.32–0.47)	0.57 (0.39–0.75)
Total	3–5	3 (2012–2013)	489	0	0.18 (0.17–0.19)	0.088 (0.073–0.10)	0.16 (0.14–0.18)	0.38 (0.33–0.43)	0.53 (0.42–0.64)
Total	6–11	2 (2009–2011)	508	0	0.14 (0.13–0.16)	0.079 (0.071–0.087)	0.12 (0.11–0.14)	0.31 (0.26–0.37)	0.44[E] (0.26–0.63)
Total	6–11	3 (2012–2013)	501	0.20	0.13 (0.12–0.15)	0.068 (0.060–0.077)	0.12 (0.10–0.14)	0.29 (0.20–0.38)	0.37 (0.28–0.45)
Total	12–19	2 (2009–2011)	504	0	0.12 (0.11–0.13)	0.059 (0.055–0.063)	0.11 (0.095–0.12)	0.25 (0.18–0.32)	0.32 (0.25–0.40)
Total	12–19	3 (2012–2013)	505	0	0.11 (0.097–0.13)	0.052 (0.040–0.064)	0.099 (0.090–0.11)	0.29 (0.22–0.35)	0.37[E] (0.10–0.64)
Total	20–39	2 (2009–2011)	353	0	0.14 (0.12–0.16)	0.057 (0.043–0.071)	0.12 (0.090–0.16)	0.35 (0.23–0.47)	0.49 (0.36–0.62)
Total	20–39	3 (2012–2013)	350	0	0.14 (0.12–0.16)	0.060 (0.041–0.079)	0.13 (0.12–0.14)	0.34 (0.27–0.41)	0.50 (0.39–0.61)
Total	40–59	2 (2009–2011)	357	0	0.17 (0.15–0.18)	0.078 (0.067–0.088)	0.15 (0.12–0.17)	0.42 (0.36–0.47)	0.58 (0.45–0.70)
Total	40–59	3 (2012–2013)	311	0	0.17 (0.15–0.19)	0.062[E] (0.038–0.085)	0.16 (0.13–0.19)	0.48[E] (0.30–0.67)	0.63 (0.44–0.82)
Total	60–79	2 (2009–2011)	286	0.35	0.18 (0.16–0.19)	0.075 (0.060–0.089)	0.16 (0.14–0.18)	0.38[E] (0.24–0.53)	0.62 (0.47–0.78)
Total	60–79	3 (2012–2013)	348	0	0.16 (0.13–0.19)	0.059 (0.048–0.069)	0.13 (0.11–0.15)	0.46 (0.36–0.57)	0.81[E] (0.24–1.4)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

2-Hydroxyphenanthrene

2-Hydroxyphenanthrene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2520	0	0.067 (0.062–0.071)	0.027 (0.024–0.031)	0.065 (0.060–0.069)	0.17 (0.14–0.20)	0.23 (0.18–0.29)
Total	3–79	3 (2012–2013)	2503	0	0.061 (0.054–0.068)	0.021 (0.016–0.025)	0.056 (0.048–0.064)	0.18 (0.16–0.20)	0.28 (0.24–0.33)
Males	3–79	2 (2009–2011)	1265	0	0.074 (0.066–0.083)	0.029 (0.025–0.033)	0.070 (0.062–0.078)	0.18 (0.13–0.23)	0.26 (0.19–0.33)
Males	3–79	3 (2012–2013)	1238	0	0.071 (0.065–0.078)	0.027 (0.023–0.031)	0.065 (0.058–0.071)	0.19 (0.15–0.23)	0.31 (0.21–0.41)
Females	3–79	2 (2009–2011)	1255	0	0.060 (0.056–0.065)	0.024 (0.020–0.029)	0.058 (0.052–0.064)	0.14 (0.11–0.16)	0.19[E] (0.12–0.26)
Females	3–79	3 (2012–2013)	1265	0	0.052 (0.044–0.063)	0.017 (0.013–0.021)	0.047 (0.035–0.059)	0.15 (0.11–0.18)	0.22[E] (0.10–0.33)
Total	3–5	2 (2009–2011)	506	0	0.043 (0.038–0.049)	0.023 (0.019–0.027)	0.040 (0.033–0.046)	0.086 (0.060–0.11)	0.11 (0.077–0.15)
Total	3–5	3 (2012–2013)	490	0	0.033 (0.028–0.038)	0.014 (0.010–0.018)	0.031 (0.028–0.035)	0.074 (0.067–0.081)	0.090 (0.076–0.10)
Total	6–11	2 (2009–2011)	510	0	0.052 (0.046–0.059)	0.025 (0.021–0.030)	0.050 (0.045–0.056)	0.10 (0.076–0.13)	0.14 (0.11–0.17)
Total	6–11	3 (2012–2013)	500	0	0.041 (0.036–0.045)	0.018 (0.014–0.022)	0.040 (0.034–0.047)	0.090 (0.073–0.11)	0.12 (0.085–0.17)
Total	12–19	2 (2009–2011)	506	0	0.067 (0.061–0.074)	0.033 (0.024–0.042)	0.064 (0.058–0.069)	0.16 (0.11–0.20)	0.19 (0.15–0.24)
Total	12–19	3 (2012–2013)	505	0	0.064 (0.054–0.075)	0.024 (0.017–0.032)	0.061 (0.051–0.071)	0.16 (0.12–0.20)	0.26[E] (0.13–0.38)
Total	20–39	2 (2009–2011)	354	0	0.069 (0.060–0.078)	0.028 (0.023–0.033)	0.067 (0.059–0.074)	0.17 (0.13–0.21)	0.23[E] (0.13–0.32)
Total	20–39	3 (2012–2013)	350	0	0.083 (0.072–0.095)	0.031 (0.026–0.036)	0.087 (0.068–0.11)	0.19[E] (0.12–0.26)	0.33[E] (0.17–0.49)
Total	40–59	2 (2009–2011)	359	0	0.073 (0.064–0.083)	0.027 (0.018–0.036)	0.071 (0.062–0.081)	0.20 (0.14–0.26)	0.27 (0.20–0.35)
Total	40–59	3 (2012–2013)	311	0	0.057 (0.048–0.068)	0.019[E] (0.011–0.028)	0.050 (0.037–0.062)	0.16[E] (0.098–0.23)	0.27[E] (0.17–0.37)
Total	60–79	2 (2009–2011)	285	0	0.064 (0.058–0.071)	0.026 (0.018–0.034)	0.062 (0.055–0.070)	0.15 (0.11–0.19)	F
Total	60–79	3 (2012–2013)	347	0	0.059 (0.049–0.073)	0.019[E] (0.012–0.027)	0.054 (0.043–0.064)	0.24[E] (0.12–0.36)	F

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

2-Hydroxyphenanthrene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2510	0	0.067 (0.062–0.072)	0.030 (0.027–0.034)	0.062 (0.057–0.067)	0.14 (0.12–0.16)	0.18 (0.16–0.20)
Total	3–79	3 (2012–2013)	2502	0	0.063 (0.058–0.068)	0.028 (0.025–0.031)	0.056 (0.052–0.060)	0.16 (0.14–0.18)	0.21 (0.17–0.26)
Males	3–79	2 (2009–2011)	1261	0	0.063 (0.058–0.070)	0.029 (0.027–0.031)	0.059 (0.052–0.066)	0.15 (0.12–0.18)	0.19 (0.15–0.23)
Males	3–79	3 (2012–2013)	1238	0	0.059 (0.053–0.066)	0.028 (0.024–0.031)	0.054 (0.049–0.059)	0.17 (0.14–0.19)	0.20 (0.16–0.24)
Females	3–79	2 (2009–2011)	1249	0	0.070 (0.062–0.078)	0.033 (0.028–0.039)	0.066 (0.060–0.072)	0.14 (0.11–0.17)	0.18 (0.12–0.23)
Females	3–79	3 (2012–2013)	1264	0	0.067 (0.060–0.075)	0.031 (0.025–0.036)	0.061 (0.050–0.073)	0.16 (0.12–0.19)	0.22 (0.17–0.28)
Total	3–5	2 (2009–2011)	505	0	0.077 (0.066–0.089)	0.040 (0.032–0.047)	0.076 (0.064–0.088)	0.15 (0.12–0.19)	0.18[E] (0.089–0.27)
Total	3–5	3 (2012–2013)	489	0	0.063 (0.056–0.071)	0.034 (0.027–0.040)	0.058 (0.051–0.064)	0.13 (0.11–0.15)	0.17 (0.14–0.19)
Total	6–11	2 (2009–2011)	508	0	0.061 (0.055–0.067)	0.034 (0.029–0.039)	0.057 (0.052–0.061)	0.11 (0.080–0.15)	0.17 (0.12–0.22)
Total	6–11	3 (2012–2013)	500	0	0.052 (0.045–0.060)	0.027 (0.020–0.034)	0.048 (0.039–0.058)	0.10 (0.085–0.12)	0.13 (0.10–0.16)
Total	12–19	2 (2009–2011)	504	0	0.051 (0.046–0.057)	0.027 (0.025–0.029)	0.047 (0.042–0.052)	0.10 (0.073–0.13)	0.13[E] (0.078–0.18)
Total	12–19	3 (2012–2013)	505	0	0.048 (0.040–0.058)	0.024 (0.020–0.028)	0.045 (0.036–0.053)	0.099 (0.072–0.13)	0.13[E] (0.060–0.21)
Total	20–39	2 (2009–2011)	352	0	0.061 (0.053–0.071)	0.029 (0.026–0.032)	0.057 (0.048–0.066)	0.15 (0.10–0.19)	0.18 (0.14–0.22)
Total	20–39	3 (2012–2013)	350	0	0.064 (0.055–0.073)	0.029 (0.024–0.033)	0.055 (0.049–0.062)	0.17 (0.14–0.20)	0.20 (0.14–0.26)
Total	40–59	2 (2009–2011)	357	0	0.074 (0.067–0.081)	0.033 (0.028–0.038)	0.071 (0.063–0.078)	0.17 (0.13–0.20)	0.18 (0.14–0.22)
Total	40–59	3 (2012–2013)	311	0	0.067 (0.059–0.077)	0.029 (0.024–0.035)	0.066 (0.057–0.075)	0.17 (0.12–0.21)	0.22 (0.16–0.29)
Total	60–79	2 (2009–2011)	284	0	0.075 (0.067–0.084)	0.036 (0.029–0.043)	0.066 (0.061–0.072)	0.14[E] (0.085–0.19)	F
Total	60–79	3 (2012–2013)	347	0	0.068 (0.057–0.082)	0.029 (0.022–0.037)	0.057 (0.048–0.066)	0.19 (0.13–0.24)	F

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

3-Hydroxyphenanthrene

3-Hydroxyphenanthrene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2515	0	0.087 (0.080–0.095)	0.026 (0.023–0.029)	0.089 (0.080–0.098)	0.28 (0.22–0.35)	0.39 (0.31–0.46)
Total	3–79	3 (2012–2013)	2505	0	0.083 (0.077–0.090)	0.021 (0.016–0.026)	0.081 (0.075–0.087)	0.29 (0.24–0.34)	0.48 (0.40–0.57)
Males	3–79	2 (2009–2011)	1265	0	0.10 (0.087–0.12)	0.030 (0.026–0.035)	0.099 (0.085–0.11)	0.33 (0.25–0.42)	0.45 (0.30–0.60)
Males	3–79	3 (2012–2013)	1241	0	0.099 (0.092–0.11)	0.029 (0.020–0.039)	0.098 (0.084–0.11)	0.33 (0.25–0.40)	0.54 (0.44–0.64)
Females	3–79	2 (2009–2011)	1250	0	0.075 (0.069–0.082)	0.022 (0.018–0.026)	0.078 (0.066–0.090)	0.22 (0.14–0.29)	0.35 (0.26–0.44)
Females	3–79	3 (2012–2013)	1264	0	0.070 (0.060–0.082)	0.017 (0.013–0.021)	0.065 (0.051–0.079)	0.28 (0.22–0.34)	0.40 (0.27–0.52)
Total	3–5	2 (2009–2011)	501	0	0.077 (0.068–0.086)	0.030 (0.026–0.034)	0.076 (0.064–0.088)	0.18[E] (0.10–0.25)	0.28 (0.20–0.35)
Total	3–5	3 (2012–2013)	490	0	0.065 (0.058–0.074)	0.020 (0.015–0.024)	0.067 (0.059–0.075)	0.19 (0.16–0.22)	0.28 (0.22–0.34)
Total	6–11	2 (2009–2011)	509	0	0.084 (0.071–0.099)	0.029 (0.023–0.035)	0.092 (0.072–0.11)	0.21 (0.16–0.27)	0.28 (0.21–0.34)
Total	6–11	3 (2012–2013)	501	0	0.069 (0.059–0.081)	0.021 (0.014–0.029)	0.073 (0.059–0.087)	0.17 (0.13–0.21)	0.22 (0.16–0.28)
Total	12–19	2 (2009–2011)	506	0	0.094 (0.084–0.11)	0.033 (0.025–0.042)	0.091 (0.077–0.10)	0.26 (0.18–0.33)	0.35[E] (0.20–0.50)
Total	12–19	3 (2012–2013)	505	0	0.091 (0.081–0.10)	0.028[E] (0.015–0.040)	0.089 (0.075–0.10)	0.28 (0.19–0.38)	0.42 (0.30–0.55)
Total	20–39	2 (2009–2011)	355	0	0.091 (0.078–0.11)	0.027 (0.020–0.034)	0.099 (0.070–0.13)	0.30 (0.21–0.39)	0.38 (0.27–0.49)
Total	20–39	3 (2012–2013)	350	0	0.11 (0.093–0.13)	0.035 (0.026–0.044)	0.10 (0.077–0.13)	0.30[E] (0.19–0.40)	0.58[E] (0.25–0.91)
Total	40–59	2 (2009–2011)	358	0	0.091 (0.078–0.11)	0.023[E] (0.014–0.032)	0.093 (0.082–0.10)	0.34 (0.27–0.41)	0.44[E] (0.27–0.60)
Total	40–59	3 (2012–2013)	311	0	0.078 (0.066–0.092)	0.021 (0.015–0.027)	0.074 (0.060–0.088)	0.29 (0.22–0.35)	0.38 (0.26–0.50)
Total	60–79	2 (2009–2011)	286	0	0.073 (0.063–0.085)	0.020 (0.016–0.025)	0.073 (0.059–0.086)	0.24 (0.18–0.29)	0.33[E] (0.12–0.54)
Total	60–79	3 (2012–2013)	348	0	0.072 (0.058–0.089)	0.015[E] (0.0058–0.024)	0.066 (0.050–0.083)	0.48 (0.32–0.65)	0.58 (0.39–0.76)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

3-Hydroxyphenanthrene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2505	0	0.087 (0.080–0.094)	0.038 (0.035–0.041)	0.079 (0.073–0.085)	0.23 (0.18–0.27)	0.37 (0.29–0.46)
Total	3–79	3 (2012–2013)	2504	0	0.086 (0.080–0.092)	0.032 (0.029–0.035)	0.082 (0.072–0.091)	0.26 (0.23–0.28)	0.35 (0.28–0.42)
Males	3–79	2 (2009–2011)	1261	0	0.086 (0.076–0.098)	0.035 (0.031–0.039)	0.079 (0.069–0.090)	0.26 (0.18–0.35)	0.42 (0.29–0.55)
Males	3–79	3 (2012–2013)	1241	0	0.083 (0.074–0.093)	0.031 (0.027–0.036)	0.078 (0.063–0.093)	0.26 (0.24–0.27)	0.35 (0.25–0.44)
Females	3–79	2 (2009–2011)	1244	0	0.087 (0.079–0.095)	0.042 (0.037–0.046)	0.079 (0.072–0.086)	0.19 (0.15–0.23)	0.31[E] (0.15–0.47)
Females	3–79	3 (2012–2013)	1263	0	0.090 (0.081–0.099)	0.036 (0.033–0.039)	0.084 (0.073–0.095)	0.26 (0.20–0.32)	0.35 (0.26–0.45)
Total	3–5	2 (2009–2011)	500	0	0.14 (0.12–0.15)	0.067 (0.059–0.076)	0.13 (0.11–0.15)	0.29 (0.25–0.33)	0.36 (0.27–0.44)
Total	3–5	3 (2012–2013)	489	0	0.13 (0.12–0.14)	0.065 (0.056–0.074)	0.11 (0.097–0.12)	0.28 (0.24–0.31)	0.41 (0.31–0.51)
Total	6–11	2 (2009–2011)	507	0	0.098 (0.087–0.11)	0.049 (0.039–0.058)	0.087 (0.075–0.10)	0.20 (0.14–0.25)	0.27[E] (0.098–0.44)
Total	6–11	3 (2012–2013)	501	0	0.088 (0.076–0.10)	0.043 (0.038–0.048)	0.082 (0.064–0.10)	0.18 (0.13–0.24)	0.24 (0.17–0.30)
Total	12–19	2 (2009–2011)	504	0	0.072 (0.064–0.081)	0.037 (0.034–0.039)	0.068 (0.061–0.074)	0.14[E] (0.060–0.22)	0.23[E] (0.13–0.32)
Total	12–19	3 (2012–2013)	505	0	0.069 (0.062–0.077)	0.034 (0.029–0.038)	0.060 (0.051–0.068)	0.15 (0.11–0.19)	0.24[E] (0.13–0.36)
Total	20–39	2 (2009–2011)	353	0	0.081 (0.071–0.093)	0.038 (0.033–0.042)	0.069 (0.055–0.082)	0.23[E] (0.12–0.33)	0.38[E] (0.23–0.52)
Total	20–39	3 (2012–2013)	350	0	0.084 (0.070–0.10)	0.031 (0.025–0.038)	0.081 (0.065–0.098)	0.25 (0.20–0.31)	0.34 (0.22–0.47)
Total	40–59	2 (2009–2011)	356	0	0.092 (0.083–0.10)	0.037 (0.032–0.043)	0.086 (0.073–0.099)	0.27 (0.18–0.35)	0.45 (0.32–0.58)
Total	40–59	3 (2012–2013)	311	0	0.092 (0.081–0.10)	0.033 (0.026–0.040)	0.097 (0.087–0.11)	0.28 (0.20–0.35)	0.34 (0.22–0.45)
Total	60–79	2 (2009–2011)	285	0	0.085 (0.075–0.096)	0.039 (0.032–0.045)	0.077 (0.071–0.083)	0.18[E] (0.11–0.24)	0.30[E] (0.13–0.47)
Total	60–79	3 (2012–2013)	348	0	0.083 (0.069–0.10)	0.030 (0.022–0.038)	0.069 (0.059–0.079)	0.33 (0.24–0.41)	0.43[E] (0.18–0.68)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

4-Hydroxyphenanthrene

4-Hydroxyphenanthrene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2519	0.08	0.024 (0.022–0.027)	0.0065 (0.0055–0.0075)	0.019 (0.016–0.022)	0.091 (0.074–0.11)	0.13 (0.11–0.15)
Total	3–79	3 (2012–2013)	2495	4.33	0.021 (0.019–0.023)	0.0055 (0.0044–0.0065)	0.020 (0.016–0.023)	0.086 (0.068–0.10)	0.14 (0.11–0.18)
Males	3–79	2 (2009–2011)	1266	0	0.027 (0.023–0.031)	0.0071 (0.0053–0.0088)	0.022 (0.017–0.027)	0.10 (0.074–0.13)	0.15 (0.10–0.20)
Males	3–79	3 (2012–2013)	1236	3.32	0.024 (0.021–0.027)	0.0067 (0.0047–0.0087)	0.023 (0.020–0.026)	0.097 (0.074–0.12)	0.15 (0.11–0.19)
Females	3–79	2 (2009–2011)	1253	0.16	0.022 (0.020–0.024)	0.0058 (0.0047–0.0070)	0.017 (0.014–0.020)	0.085 (0.065–0.10)	0.13 (0.095–0.16)
Females	3–79	3 (2012–2013)	1259	5.32	0.018 (0.015–0.023)	0.0044 (0.0031–0.0058)	0.017 (0.011–0.022)	0.076 (0.052–0.10)	0.13[E] (0.079–0.18)
Total	3–5	2 (2009–2011)	505	0	0.017 (0.015–0.020)	0.0056 (0.0045–0.0068)	0.014 (0.012–0.016)	0.051 (0.042–0.061)	0.063[E] (0.032–0.093)
Total	3–5	3 (2012–2013)	488	4.30	0.014 (0.012–0.016)	0.0045 (0.0031–0.0059)	0.013 (0.011–0.016)	0.047 (0.038–0.056)	0.062 (0.051–0.073)
Total	6–11	2 (2009–2011)	510	0	0.020 (0.016–0.023)	0.0063 (0.0054–0.0073)	0.016 (0.012–0.020)	0.057 (0.040–0.075)	0.074 (0.049–0.099)
Total	6–11	3 (2012–2013)	500	4.40	0.014 (0.013–0.017)	0.0046 (0.0033–0.0059)	0.015 (0.012–0.018)	0.041 (0.032–0.050)	0.062 (0.050–0.073)
Total	12–19	2 (2009–2011)	505	0.20	0.023 (0.020–0.025)	0.0075 (0.0055–0.0096)	0.018 (0.016–0.021)	0.067 (0.053–0.081)	0.094 (0.062–0.12)
Total	12–19	3 (2012–2013)	504	4.56	0.021 (0.018–0.024)	0.0068 (0.0053–0.0083)	0.018 (0.015–0.021)	0.077 (0.052–0.10)	0.11[E] (0.070–0.16)
Total	20–39	2 (2009–2011)	355	0	0.026 (0.022–0.031)	0.0064 (0.0045–0.0083)	0.025[E] (0.014–0.036)	0.088 (0.057–0.12)	0.13 (0.086–0.18)
Total	20–39	3 (2012–2013)	349	2.87	0.027 (0.022–0.034)	0.0072 (0.0054–0.0090)	0.028 (0.020–0.036)	0.095[E] (0.057–0.13)	0.16[E] (0.088–0.24)
Total	40–59	2 (2009–2011)	357	0	0.027 (0.023–0.032)	0.0075 (0.0053–0.0098)	0.020 (0.015–0.024)	0.11 (0.085–0.14)	0.15[E] (0.097–0.21)
Total	40–59	3 (2012–2013)	308	4.55	0.021 (0.017–0.025)	0.0045[E] (<LOD–0.0067)	0.019 (0.014–0.025)	0.090[E] (0.050–0.13)	0.12[E] (0.075–0.17)
Total	60–79	2 (2009–2011)	287	0.35	0.022 (0.019–0.026)	0.0057 (0.0044–0.0070)	0.018 (0.013–0.022)	0.086[E] (0.054–0.12)	0.14[E] (0.075–0.21)
Total	60–79	3 (2012–2013)	346	5.20	0.020 (0.016–0.024)	0.0047[E] (<LOD–0.0071)	0.018 (0.013–0.022)	F	0.25[E] (0.12–0.39)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

4-Hydroxyphenanthrene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2509	0.08	0.024 (0.022–0.026)	0.0089 (0.0084–0.0095)	0.020 (0.016–0.024)	0.077 (0.060–0.094)	0.11 (0.082–0.14)
Total	3–79	3 (2012–2013)	2494	4.33	0.022 (0.020–0.024)	0.0077 (0.0066–0.0088)	0.019 (0.016–0.021)	0.076 (0.067–0.085)	0.10 (0.083–0.12)
Males	3–79	2 (2009–2011)	1262	0	0.022 (0.019–0.026)	0.0078 (0.0070–0.0087)	0.020 (0.019–0.020)	0.088 (0.061–0.11)	0.13 (0.085–0.17)
Males	3–79	3 (2012–2013)	1236	3.32	0.020 (0.017–0.023)	0.0071 (0.0056–0.0087)	0.017 (0.014–0.019)	0.077 (0.063–0.091)	0.099 (0.081–0.12)
Females	3–79	2 (2009–2011)	1247	0.16	0.026 (0.023–0.029)	0.0092 (0.0089–0.0095)	0.027 (0.018–0.035)	0.068 (0.051–0.086)	0.10 (0.070–0.13)
Females	3–79	3 (2012–2013)	1258	5.32	0.023 (0.021–0.026)	0.0081 (0.0069–0.0094)	0.022 (0.019–0.025)	0.076 (0.061–0.090)	0.11 (0.079–0.14)
Total	3–5	2 (2009–2011)	504	0	0.030 (0.026–0.035)	0.0095 (0.0089–0.010)	0.024 (0.021–0.028)	0.085 (0.069–0.10)	0.097 (0.076–0.12)
Total	3–5	3 (2012–2013)	487	4.30	0.026 (0.024–0.029)	0.011 (0.010–0.012)	0.023 (0.019–0.027)	0.068 (0.062–0.074)	0.095 (0.075–0.12)
Total	6–11	2 (2009–2011)	508	0	0.022 (0.018–0.026)	0.0091 (0.0088–0.0094)	0.016 (0.012–0.020)	0.060 (0.042–0.078)	0.080 (0.060–0.10)
Total	6–11	3 (2012–2013)	500	4.40	0.018 (0.016–0.021)	0.0078 (0.0066–0.0089)	0.017 (0.014–0.020)	0.045 (0.040–0.050)	0.052 (0.043–0.061)
Total	12–19	2 (2009–2011)	503	0.20	0.017 (0.015–0.019)	0.0077 (0.0068–0.0086)	0.019[E] (0.011–0.027)	0.042 (0.030–0.054)	0.059 (0.039–0.078)
Total	12–19	3 (2012–2013)	504	4.56	0.016 (0.014–0.018)	0.0070 (0.0060–0.0080)	0.013 (0.011–0.016)	0.036 (0.025–0.047)	F
Total	20–39	2 (2009–2011)	353	0	0.023 (0.019–0.027)	0.0078 (0.0065–0.0091)	0.020 (0.018–0.021)	0.070[E] (0.041–0.098)	0.11[E] (0.067–0.16)
Total	20–39	3 (2012–2013)	349	2.87	0.021 (0.017–0.026)	0.0080 (0.0064–0.0096)	0.017 (0.012–0.022)	0.077 (0.059–0.095)	0.093 (0.071–0.11)
Total	40–59	2 (2009–2011)	355	0	0.027 (0.024–0.030)	0.0091 (0.0087–0.0095)	0.027 (0.018–0.036)	0.091 (0.074–0.11)	0.14[E] (0.088–0.19)
Total	40–59	3 (2012–2013)	308	4.55	0.024 (0.020–0.029)	0.0080 (0.0054–0.011)	0.024 (0.018–0.030)	0.083 (0.060–0.11)	0.11[E] (0.070–0.15)
Total	60–79	2 (2009–2011)	286	0.35	0.026 (0.023–0.031)	0.0090 (0.0082–0.0098)	0.029[E] (0.018–0.040)	0.081[E] (0.048–0.11)	0.13[E] (0.070–0.19)
Total	60–79	3 (2012–2013)	346	5.20	0.023 (0.019–0.027)	0.0074 (0.0058–0.0090)	0.020 (0.015–0.024)	0.096[E] (0.059–0.13)	0.14[E] (0.075–0.21)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

9-Hydroxyphenanthrene

9-Hydroxyphenanthrene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2474	5.86	0.039 (0.034–0.044)	0.0075 (0.0066–0.0084)	0.036 (0.029–0.043)	0.24 (0.18–0.31)	0.41 (0.33–0.49)
Total	3–79	3 (2012–2013)	2295	3.66	0.036 (0.033–0.040)	0.0080 (0.0059–0.010)	0.034 (0.029–0.038)	0.19 (0.14–0.23)	0.32 (0.21–0.43)
Males	3–79	2 (2009–2011)	1249	5.44	0.043 (0.035–0.052)	0.0080 (0.0065–0.0094)	0.043 (0.033–0.053)	0.25[E] (0.15–0.35)	0.49 (0.32–0.65)
Males	3–79	3 (2012–2013)	1155	2.60	0.040 (0.036–0.045)	0.0099 (0.0086–0.011)	0.037 (0.032–0.041)	0.19 (0.15–0.22)	0.26[E] (0.12–0.40)
Females	3–79	2 (2009–2011)	1225	6.29	0.035 (0.031–0.040)	0.0070 (0.0053–0.0086)	0.032 (0.028–0.036)	0.23[E] (0.11–0.34)	0.38 (0.26–0.50)
Females	3–79	3 (2012–2013)	1140	4.74	0.032 (0.026–0.039)	0.0070 (0.0045–0.0095)	0.032 (0.026–0.037)	0.19[E] (0.083–0.29)	0.39 (0.25–0.53)
Total	3–5	2 (2009–2011)	490	11.43	0.018 (0.015–0.022)	<LOD	0.020 (0.017–0.023)	0.072 (0.054–0.089)	0.095[E] (0.041–0.15)
Total	3–5	3 (2012–2013)	426	4.46	0.019 (0.017–0.022)	0.0069[E] (<LOD–0.0099)	0.019 (0.015–0.023)	0.057 (0.042–0.072)	0.072 (0.051–0.093)
Total	6–11	2 (2009–2011)	502	5.78	0.019 (0.015–0.023)	0.0044[E] (<LOD–0.0075)	0.022 (0.017–0.026)	0.056 (0.043–0.069)	0.076 (0.055–0.097)
Total	6–11	3 (2012–2013)	447	4.92	0.019 (0.017–0.022)	0.0058[E] (<LOD–0.0091)	0.021 (0.019–0.023)	0.048 (0.041–0.054)	F
Total	12–19	2 (2009–2011)	499	5.41	0.027 (0.023–0.032)	0.0073 (0.0058–0.0089)	0.029 (0.023–0.035)	0.099 (0.076–0.12)	0.15[E] (0.092–0.20)
Total	12–19	3 (2012–2013)	480	3.75	0.026 (0.021–0.031)	0.0070[E] (0.0040–0.0099)	0.022 (0.018–0.026)	0.10 (0.066–0.13)	F
Total	20–39	2 (2009–2011)	348	3.45	0.041 (0.034–0.050)	0.0088[E] (0.0055–0.012)	0.040 (0.030–0.050)	0.23[E] (0.088–0.38)	0.39[E] (0.20–0.58)
Total	20–39	3 (2012–2013)	331	2.11	0.040 (0.031–0.051)	0.0094 (0.0072–0.012)	0.036 (0.030–0.043)	0.19 (0.13–0.25)	0.23[E] (0.088–0.36)
Total	40–59	2 (2009–2011)	350	3.14	0.049 (0.040–0.059)	0.0089 (0.0071–0.011)	0.045 (0.034–0.056)	0.31 (0.23–0.38)	0.48 (0.40–0.56)
Total	40–59	3 (2012–2013)	287	4.18	0.041 (0.031–0.054)	0.0080 (0.0052–0.011)	0.043 (0.031–0.055)	0.22[E] (0.086–0.35)	0.38[E] (0.22–0.53)
Total	60–79	2 (2009–2011)	285	3.51	0.043 (0.033–0.056)	0.0065[E] (<LOD–0.0092)	0.035 (0.024–0.045)	0.31[E] (0.19–0.42)	0.60[E] (0.34–0.85)
Total	60–79	3 (2012–2013)	324	1.85	0.041 (0.034–0.050)	F	0.040 (0.031–0.049)	0.28[E] (0.076–0.49)	F

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

9-Hydroxyphenanthrene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2464	5.86	0.039 (0.034–0.044)	0.010 (0.0091–0.011)	0.032 (0.026–0.038)	0.22 (0.16–0.28)	0.34 (0.26–0.42)
Total	3–79	3 (2012–2013)	2294	3.66	0.037 (0.034–0.041)	0.011 (0.0095–0.012)	0.032 (0.028–0.037)	0.17 (0.13–0.21)	0.29 (0.20–0.38)
Males	3–79	2 (2009–2011)	1245	5.44	0.037 (0.030–0.045)	0.0099 (0.0077–0.012)	0.029 (0.022–0.035)	0.23[E] (0.14–0.33)	0.38 (0.27–0.48)
Males	3–79	3 (2012–2013)	1155	2.60	0.033 (0.028–0.040)	0.0097 (0.0079–0.012)	0.030 (0.023–0.037)	0.16 (0.11–0.21)	0.23 (0.16–0.30)
Females	3–79	2 (2009–2011)	1219	6.29	0.041 (0.035–0.048)	0.010[E] (0.0060–0.014)	0.035 (0.027–0.043)	0.21[E] (0.13–0.29)	0.29[E] (0.18–0.39)
Females	3–79	3 (2012–2013)	1139	4.74	0.041 (0.037–0.046)	0.012 (0.010–0.013)	0.035 (0.030–0.039)	0.21[E] (0.12–0.30)	0.39 (0.25–0.53)
Total	3–5	2 (2009–2011)	489	11.43	0.032 (0.027–0.037)	<LOD	0.037 (0.030–0.043)	0.11 (0.086–0.13)	0.14[E] (0.086–0.20)
Total	3–5	3 (2012–2013)	425	4.46	0.037 (0.035–0.040)	0.017 (0.013–0.020)	0.036 (0.032–0.040)	0.081 (0.066–0.095)	0.10 (0.086–0.12)
Total	6–11	2 (2009–2011)	500	5.78	0.022 (0.018–0.027)	0.0068[E] (<LOD–0.010)	0.025 (0.021–0.029)	0.053 (0.044–0.063)	0.071 (0.050–0.093)
Total	6–11	3 (2012–2013)	447	4.92	0.025 (0.022–0.028)	0.012 (0.0086–0.015)	0.023 (0.020–0.025)	0.057 (0.046–0.069)	0.082[E] (0.037–0.13)
Total	12–19	2 (2009–2011)	497	5.41	0.021 (0.018–0.024)	0.0076 (0.0060–0.0092)	0.020 (0.017–0.022)	0.059[E] (0.037–0.082)	0.087[E] (0.043–0.13)
Total	12–19	3 (2012–2013)	480	3.75	0.019 (0.017–0.022)	0.0087 (0.0071–0.010)	0.016 (0.014–0.018)	0.056[E] (0.030–0.082)	0.097[E] (0.042–0.15)
Total	20–39	2 (2009–2011)	346	3.45	0.037 (0.029–0.047)	0.010[E] (0.0047–0.015)	0.028 (0.020–0.035)	0.26[E] (0.11–0.41)	0.36[E] (0.22–0.51)
Total	20–39	3 (2012–2013)	331	2.11	0.030 (0.023–0.040)	0.010 (0.0066–0.013)	0.025[E] (0.012–0.038)	0.12[E] (0.048–0.20)	0.17[E] (0.093–0.25)
Total	40–59	2 (2009–2011)	348	3.14	0.049 (0.040–0.060)	0.012[E] (0.0067–0.018)	0.043 (0.030–0.056)	0.25 (0.19–0.31)	0.40[E] (0.25–0.55)
Total	40–59	3 (2012–2013)	287	4.18	0.048 (0.038–0.060)	0.011 (0.0076–0.015)	0.042[E] (0.024–0.061)	0.24[E] (0.10–0.37)	0.39[E] (0.23–0.56)
Total	60–79	2 (2009–2011)	284	3.51	0.051 (0.040–0.064)	0.013[E] (0.0078–0.019)	0.039[E] (0.023–0.056)	0.29[E] (0.18–0.40)	F
Total	60–79	3 (2012–2013)	324	1.85	0.048 (0.040–0.058)	0.013 (0.0097–0.017)	0.041 (0.031–0.051)	0.25[E] (0.14–0.36)	0.37[E] (0.21–0.54)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

PYRENE

1-Hydroxypyrene

1-Hydroxypyrene — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2422	0.04	0.11 (0.099–0.12)	0.031 (0.027–0.034)	0.10 (0.092–0.11)	0.35 (0.31–0.39)	0.57 (0.47–0.68)
Total	3–79	3 (2012–2013)	2410	0.04	0.088 (0.078–0.10)	0.027 (0.020–0.035)	0.087 (0.078–0.096)	0.31 (0.26–0.35)	0.46 (0.38–0.55)
Males	3–79	2 (2009–2011)	1206	0	0.12 (0.11–0.14)	0.040 (0.034–0.045)	0.12 (0.10–0.13)	0.38 (0.25–0.50)	0.59 (0.46–0.73)
Males	3–79	3 (2012–2013)	1178	0.08	0.10 (0.090–0.12)	0.033 (0.023–0.042)	0.094 (0.088–0.10)	0.36 (0.30–0.43)	0.52 (0.45–0.60)
Females	3–79	2 (2009–2011)	1216	0.08	0.095 (0.088–0.10)	0.026 (0.021–0.031)	0.095 (0.085–0.10)	0.33 (0.28–0.37)	0.48 (0.34–0.62)
Females	3–79	3 (2012–2013)	1232	0	0.077 (0.064–0.092)	0.022[E] (0.014–0.031)	0.077 (0.061–0.093)	0.26 (0.21–0.30)	0.36 (0.25–0.48)
Total	3–5	2 (2009–2011)	504	0	0.12 (0.11–0.13)	0.050 (0.041–0.059)	0.11 (0.10–0.12)	0.27 (0.20–0.34)	0.40 (0.30–0.51)
Total	3–5	3 (2012–2013)	493	0	0.093 (0.077–0.11)	0.029 (0.023–0.036)	0.098 (0.081–0.12)	0.26 (0.21–0.31)	0.31 (0.25–0.37)
Total	6–11	2 (2009–2011)	507	0	0.13 (0.11–0.15)	0.049 (0.039–0.058)	0.12 (0.096–0.14)	0.34 (0.25–0.42)	0.47 (0.34–0.60)
Total	6–11	3 (2012–2013)	501	0	0.092 (0.084–0.10)	0.032 (0.024–0.039)	0.097 (0.088–0.11)	0.21 (0.16–0.26)	0.28 (0.22–0.33)
Total	12–19	2 (2009–2011)	480	0	0.15 (0.14–0.17)	0.050[E] (0.031–0.069)	0.15 (0.13–0.17)	0.44 (0.36–0.52)	0.62 (0.45–0.79)
Total	12–19	3 (2012–2013)	473	0	0.12 (0.097–0.14)	0.040[E] (0.024–0.057)	0.11 (0.092–0.13)	0.34 (0.24–0.43)	0.47 (0.34–0.60)
Total	20–39	2 (2009–2011)	327	0	0.13 (0.11–0.15)	0.041 (0.027–0.054)	0.12 (0.10–0.14)	0.35 (0.29–0.42)	0.48[E] (0.27–0.69)
Total	20–39	3 (2012–2013)	308	0	0.12 (0.10–0.15)	0.037 (0.025–0.048)	0.11 (0.077–0.15)	0.36 (0.25–0.47)	F
Total	40–59	2 (2009–2011)	329	0.30	0.10 (0.084–0.12)	0.026[E] (0.012–0.039)	0.094 (0.076–0.11)	0.44[E] (0.22–0.65)	0.58 (0.47–0.69)
Total	40–59	3 (2012–2013)	296	0	0.080 (0.067–0.095)	0.027[E] (0.016–0.039)	0.079 (0.063–0.095)	0.26[E] (0.14–0.38)	0.43[E] (0.26–0.60)
Total	60–79	2 (2009–2011)	275	0	0.067 (0.057–0.079)	0.024 (0.018–0.030)	0.062 (0.048–0.076)	0.20 (0.16–0.24)	F
Total	60–79	3 (2012–2013)	339	0.29	0.064 (0.051–0.081)	0.015[E] (0.0086–0.022)	0.060 (0.041–0.079)	0.31 (0.20–0.41)	0.50[E] (0.29–0.71)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

1-Hydroxypyrene (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2412	0.04	0.11 (0.10–0.12)	0.045 (0.042–0.048)	0.099 (0.096–0.10)	0.28 (0.24–0.33)	0.40 (0.31–0.50)
Total	3–79	3 (2012–2013)	2409	0.04	0.094 (0.084–0.10)	0.034 (0.028–0.040)	0.088 (0.079–0.096)	0.25 (0.20–0.29)	0.36 (0.24–0.47)
Males	3–79	2 (2009–2011)	1202	0	0.11 (0.093–0.12)	0.042 (0.036–0.047)	0.098 (0.091–0.10)	0.31 (0.24–0.39)	0.43[E] (0.28–0.59)
Males	3–79	3 (2012–2013)	1178	0.08	0.089 (0.076–0.10)	0.030 (0.020–0.039)	0.087 (0.075–0.099)	0.25 (0.18–0.31)	0.35 (0.26–0.44)
Females	3–79	2 (2009–2011)	1210	0.08	0.11 (0.10–0.12)	0.048 (0.044–0.052)	0.099 (0.094–0.11)	0.26 (0.21–0.31)	0.38 (0.28–0.49)
Females	3–79	3 (2012–2013)	1231	0	0.099 (0.087–0.11)	0.038 (0.027–0.049)	0.088 (0.071–0.11)	0.25 (0.19–0.30)	0.42[E] (0.23–0.60)
Total	3–5	2 (2009–2011)	503	0	0.21 (0.20–0.23)	0.11 (0.089–0.12)	0.20 (0.18–0.23)	0.41 (0.35–0.46)	0.51 (0.42–0.60)
Total	3–5	3 (2012–2013)	492	0	0.18 (0.16–0.20)	0.094 (0.078–0.11)	0.17 (0.15–0.20)	0.34 (0.28–0.41)	0.43 (0.38–0.49)
Total	6–11	2 (2009–2011)	505	0	0.15 (0.13–0.16)	0.074 (0.063–0.085)	0.14 (0.12–0.15)	0.28 (0.22–0.34)	0.37 (0.26–0.49)
Total	6–11	3 (2012–2013)	501	0	0.12 (0.11–0.13)	0.066 (0.057–0.074)	0.11 (0.091–0.12)	0.21 (0.17–0.25)	0.27 (0.23–0.31)
Total	12–19	2 (2009–2011)	478	0	0.12 (0.10–0.13)	0.056 (0.051–0.062)	0.10 (0.091–0.12)	0.28 (0.20–0.37)	0.39[E] (0.21–0.57)
Total	12–19	3 (2012–2013)	473	0	0.089 (0.073–0.11)	0.044 (0.031–0.057)	0.087 (0.074–0.10)	0.19[E] (0.12–0.26)	0.26[E] (0.15–0.37)
Total	20–39	2 (2009–2011)	325	0	0.12 (0.096–0.14)	0.050 (0.035–0.065)	0.10 (0.083–0.12)	0.28 (0.18–0.38)	0.41 (0.27–0.54)
Total	20–39	3 (2012–2013)	308	0	0.10 (0.087–0.12)	0.036 (0.026–0.047)	0.099 (0.087–0.11)	0.26[E] (0.083–0.44)	0.54[E] (0.20–0.88)
Total	40–59	2 (2009–2011)	327	0.30	0.10 (0.090–0.12)	0.043 (0.039–0.047)	0.094 (0.085–0.10)	0.33 (0.25–0.41)	0.59[E] (0.24–0.94)
Total	40–59	3 (2012–2013)	296	0	0.093 (0.080–0.11)	0.033[E] (0.020–0.046)	0.088 (0.074–0.10)	0.26[E] (0.15–0.37)	0.38[E] (0.20–0.56)
Total	60–79	2 (2009–2011)	274	0	0.079 (0.069–0.091)	0.035 (0.028–0.042)	0.078 (0.072–0.084)	0.16 (0.13–0.20)	0.23[E] (0.11–0.36)
Total	60–79	3 (2012–2013)	339	0.29	0.073 (0.060–0.090)	0.028 (0.023–0.034)	0.062 (0.050–0.075)	0.23 (0.16–0.30)	0.35 (0.23–0.48)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

Results for Volatile Organic Compounds

BENZENE

Benzene

Benzene — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2488	12.58	0.036 (0.025–0.050)	<LOD	0.039 (0.030–0.049)	0.15 (0.12–0.19)	0.24 (0.18–0.29)
Males	12–79	3 (2012–2013)	1245	11.57	0.037 (0.026–0.052)	<LOD	0.040 (0.030–0.049)	0.15 (0.13–0.18)	0.24 (0.18–0.30)
Females	12–79	3 (2012–2013)	1243	13.60	0.035[E] (0.024–0.051)	<LOD	0.038 (0.028–0.049)	0.17[E] (0.093–0.24)	0.23[E] (0.11–0.35)
Total	12–19	3 (2012–2013)	750	14.00	0.028 (0.019–0.040)	<LOD	0.034 (0.025–0.043)	0.084 (0.063–0.10)	0.12 (0.076–0.16)
Total	20–39	3 (2012–2013)	548	10.40	0.037[E] (0.023–0.059)	F	0.040 (0.027–0.054)	0.13 (0.080–0.17)	0.18 (0.14–0.22)
Total	40–59	3 (2012–2013)	598	8.70	0.040 (0.030–0.055)	<LOD	0.039 (0.028–0.050)	0.23 (0.16–0.31)	0.40[E] (0.24–0.56)
Total	60–79	3 (2012–2013)	592	16.72	0.031[E] (0.021–0.047)	<LOD	0.038 (0.026–0.051)	0.13 (0.085–0.17)	0.20 (0.16–0.24)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

S-Phenylmercapturic acid (*S*-PMA)

S-Phenylmercapturic acid (*S*-PMA) — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2525	22.10	0.20 (0.18–0.23)	<LOD	0.12 (0.095–0.15)	1.3 (0.85–1.7)	3.5 (2.5–4.5)
Total	3–79	3 (2012–2013)	2472	34.67	0.17 (0.14–0.21)	<LOD	0.10[E] (<LOD–0.16)	F	3.4 (2.3–4.5)
Males	3–79	2 (2009–2011)	1267	20.21	0.23 (0.20–0.26)	<LOD	0.13 (0.10–0.16)	F	3.9[E] (2.5–5.4)
Males	3–79	3 (2012–2013)	1223	31.07	0.20 (0.16–0.25)	<LOD	0.19[E] (0.080–0.30)	1.9[E] (0.51–3.3)	4.0 (2.7–5.3)
Females	3–79	2 (2009–2011)	1258	24.01	0.18 (0.15–0.22)	<LOD	0.11 (<LOD–0.14)	1.1[E] (0.66–1.6)	2.5[E] (0.89–4.1)
Females	3–79	3 (2012–2013)	1249	38.19	0.14 (0.10–0.19)	<LOD	0.099 (<LOD–0.12)	F	3.3[E] (1.4–5.2)
Total	3–5	2 (2009–2011)	507	20.32	0.15 (0.13–0.17)	<LOD	0.12 (0.094–0.14)	0.40 (0.29–0.52)	0.64[E] (0.40–0.88)
Total	3–5	3 (2012–2013)	491	28.51	0.11 (0.10–0.12)	<LOD	0.099 (0.096–0.10)	0.32 (0.26–0.37)	0.51[E] (0.30–0.72)
Total	6–11	2 (2009–2011)	511	25.24	0.14 (0.11–0.17)	<LOD	0.099 (0.083–0.12)	0.38 (0.28–0.49)	0.58[E] (0.33–0.82)
Total	6–11	3 (2012–2013)	491	38.90	0.099 (0.084–0.12)	<LOD	0.099 (0.092–0.11)	0.31 (0.23–0.39)	0.41 (0.35–0.47)
Total	12–19	2 (2009–2011)	506	18.97	0.17 (0.15–0.20)	<LOD	0.13 (0.094–0.16)	0.62 (0.45–0.79)	1.1[E] (0.53–1.6)
Total	12–19	3 (2012–2013)	497	32.19	0.14 (0.11–0.19)	<LOD	0.10[E] (<LOD–0.15)	F	2.3[E] (0.74–4.0)
Total	20–39	2 (2009–2011)	355	19.44	0.21 (0.17–0.27)	<LOD	0.12 (<LOD–0.16)	1.4 (1.1–1.8)	3.0[E] (1.5–4.5)
Total	20–39	3 (2012–2013)	345	35.07	0.20[E] (0.14–0.30)	<LOD	0.17[E] (<LOD–0.29)	F	3.3[E] (1.4–5.3)
Total	40–59	2 (2009–2011)	359	25.91	0.24 (0.18–0.30)	<LOD	0.13[E] (<LOD–0.20)	2.9[E] (1.1–4.7)	5.2[E] (3.2–7.3)
Total	40–59	3 (2012–2013)	306	35.62	0.20[E] (0.14–0.30)	<LOD	0.17[E] (<LOD–0.29)	F	3.4[E] (1.8–5.0)
Total	60–79	2 (2009–2011)	287	23.69	0.19 (0.15–0.23)	<LOD	0.12 (0.094–0.15)	1.1[E] (0.57–1.7)	3.4[E] (1.3–5.4)
Total	60–79	3 (2012–2013)	342	39.77	0.14 (0.11–0.18)	<LOD	0.093 (0.087–0.099)	F	5.1[E] (2.0–8.3)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

S-Phenylmercapturic acid (*S*-PMA) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2515	22.10	0.20 (0.17–0.24)	<LOD	0.19 (0.12–0.26)	1.2[E] (0.62–1.8)	3.1 (2.0–4.2)
Total	3–79	3 (2012–2013)	2471	34.67	0.18 (0.15–0.22)	<LOD	0.14 (0.11–0.16)	1.4[E] (0.86–2.0)	2.9 (1.9–4.0)
Males	3–79	2 (2009–2011)	1263	20.21	0.19 (0.16–0.23)	<LOD	0.13[E] (<LOD–0.20)	1.8[E] (0.84–2.8)	3.0[E] (1.0–5.0)
Males	3–79	3 (2012–2013)	1223	31.07	0.17 (0.14–0.21)	<LOD	0.12 (0.089–0.16)	1.4 (0.94–1.9)	2.2[E] (1.2–3.3)
Females	3–79	2 (2009–2011)	1252	24.01	0.20 (0.16–0.26)	<LOD	0.19 (0.14–0.24)	0.91[E] (0.57–1.2)	3.1[E] (1.1–5.2)
Females	3–79	3 (2012–2013)	1248	38.19	0.18 (0.14–0.24)	<LOD	0.14 (0.12–0.16)	F	3.4[E] (1.7–5.1)
Total	3–5	2 (2009–2011)	506	20.32	0.26 (0.23–0.29)	<LOD	0.29 (0.19–0.39)	0.69 (0.56–0.82)	0.91 (0.71–1.1)
Total	3–5	3 (2012–2013)	490	28.51	0.22 (0.20–0.24)	<LOD	0.20 (0.16–0.24)	0.52 (0.39–0.65)	0.79[E] (0.50–1.1)
Total	6–11	2 (2009–2011)	509	25.24	0.15 (0.13–0.19)	<LOD	0.17[E] (<LOD–0.28)	0.46 (0.31–0.61)	0.60 (0.40–0.80)
Total	6–11	3 (2012–2013)	491	38.90	0.13 (0.11–0.15)	<LOD	0.13 (0.10–0.15)	0.32 (0.27–0.37)	0.41 (0.36–0.45)
Total	12–19	2 (2009–2011)	504	18.97	0.13 (0.11–0.15)	<LOD	0.10 (0.091–0.11)	0.50 (0.34–0.66)	0.78[E] (0.50–1.1)
Total	12–19	3 (2012–2013)	497	32.19	0.11 (0.087–0.14)	<LOD	0.092 (<LOD–0.11)	F	1.3[E] (0.59–2.0)
Total	20–39	2 (2009–2011)	353	19.44	0.19 (0.14–0.25)	<LOD	F	1.6[E] (0.59–2.6)	2.9[E] (1.7–4.1)
Total	20–39	3 (2012–2013)	345	35.07	0.15 (0.11–0.21)	<LOD	0.12 (0.081–0.16)	1.1[E] (0.43–1.8)	1.7[E] (0.86–2.6)
Total	40–59	2 (2009–2011)	357	25.91	0.23 (0.17–0.31)	<LOD	0.19 (0.13–0.24)	F	4.2[E] (1.5–7.0)
Total	40–59	3 (2012–2013)	306	35.62	0.24 (0.17–0.34)	<LOD	0.17 (0.12–0.23)	2.0[E] (0.60–3.5)	3.5[E] (1.8–5.3)
Total	60–79	2 (2009–2011)	286	23.69	0.21 (0.17–0.27)	<LOD	0.19 (0.15–0.23)	1.2[E] (0.55–1.9)	2.9[E] (1.3–4.5)
Total	60–79	3 (2012–2013)	342	39.77	0.17 (0.13–0.23)	<LOD	0.12 (0.080–0.16)	2.1[E] (0.64–3.5)	3.5[E] (2.2–4.9)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

trans,trans-Muconic acid (*t,t*-MA)

trans,trans-Muconic acid (*t,t*-MA) — Geometric means and selected percentiles of urine concentrations (µg/L) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2523	0.20	64 (57–71)	15 (12–19)	59 (52–66)	330 (260–390)	500 (330–680)
Total	3–79	3 (2012–2013)	2492	0	56 (47–67)	14 (11–16)	53 (41–65)	250 (160–340)	400 (290–510)
Males	3–79	2 (2009–2011)	1267	0.24	68 (58–81)	19 (13–25)	66 (54–78)	340 (260–420)	480 (330–630)
Males	3–79	3 (2012–2013)	1231	0	64 (53–78)	17 (14–20)	59 (45–73)	260[E] (140–380)	400[E] (140–650)
Females	3–79	2 (2009–2011)	1256	0.16	59 (51–70)	13 (9.2–17)	56 (47–64)	320 (220–420)	610[E] (330–890)
Females	3–79	3 (2012–2013)	1261	0	49 (41–60)	11 (7.2–14)	46 (34–59)	230[E] (120–340)	430 (290–580)
Total	3–5	2 (2009–2011)	506	0.40	75 (63–90)	20 (15–24)	68 (52–83)	380[E] (220–540)	670 (510–840)
Total	3–5	3 (2012–2013)	489	0	65 (57–75)	14 (12–17)	51 (41–61)	440 (390–490)	730[E] (440–1000)
Total	6–11	2 (2009–2011)	511	0.20	71 (57–87)	17 (13–21)	63 (41–85)	380[E] (240–510)	540 (360–720)
Total	6–11	3 (2012–2013)	496	0	61 (49–75)	12 (7.3–16)	55 (39–71)	330[E] (200–470)	740[E] (220–1300)
Total	12–19	2 (2009–2011)	506	0	75 (61–92)	15[E] (8.4–21)	66 (47–85)	380 (290–480)	560 (440–680)
Total	12–19	3 (2012–2013)	506	0	65 (48–88)	13 (8.3–18)	61 (45–77)	360[E] (220–510)	670[E] (350–1000)
Total	20–39	2 (2009–2011)	355	0.56	62 (48–81)	13[E] (6.3–19)	70 (54–86)	310[E] (120–510)	610[E] (300–910)
Total	20–39	3 (2012–2013)	347	0	66 (46–95)	15[E] (9.0–22)	66[E] (40–92)	270[E] (140–400)	380[E] (160–590)
Total	40–59	2 (2009–2011)	359	0	65 (54–80)	17 (14–20)	57 (41–73)	310[E] (170–460)	470[E] (200–750)
Total	40–59	3 (2012–2013)	307	0	50 (39–65)	15[E] (8.4–21)	47 (32–61)	160[E] (73–240)	360[E] (130–590)
Total	60–79	2 (2009–2011)	286	0	54 (43–67)	14[E] (7.6–21)	52 (37–67)	240[E] (120–370)	400 (300–500)
Total	60–79	3 (2012–2013)	347	0	50 (40–62)	10[E] (4.5–16)	44 (34–55)	260[E] (70–460)	550[E] (170–930)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

trans,trans-Muconic acid (*t,t*-MA) (creatinine adjusted) — Geometric means and selected percentiles of urine concentrations (µg/g creatinine) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011) and cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	2513	0.20	63 (58–70)	19 (16–21)	54 (48–60)	280 (230–340)	450 (370–520)
Total	3–79	3 (2012–2013)	2491	0	58 (51–66)	19 (17–21)	51 (43–58)	220 (160–280)	390 (270–510)
Males	3–79	2 (2009–2011)	1263	0.24	59 (50–69)	17 (15–19)	52 (40–63)	230 (150–320)	380 (280–480)
Males	3–79	3 (2012–2013)	1231	0	54 (48–60)	19 (16–21)	51 (44–57)	160[E] (97–210)	290[E] (110–470)
Females	3–79	2 (2009–2011)	1250	0.16	69 (61–77)	20 (17–23)	55 (48–63)	320 (240–400)	490 (320–650)
Females	3–79	3 (2012–2013)	1260	0	63 (54–74)	19 (16–22)	51 (39–62)	270 (190–340)	460 (300–630)
Total	3–5	2 (2009–2011)	505	0.40	130 (110–160)	36 (31–41)	110 (87–130)	590 (420–750)	990[E] (580–1400)
Total	3–5	3 (2012–2013)	488	0	130 (110–150)	34 (31–37)	87 (70–100)	910 (650–1200)	1500[E] (810–2100)
Total	6–11	2 (2009–2011)	509	0.20	82 (68–99)	24 (20–28)	69 (52–87)	380 (290–470)	490 (360–620)
Total	6–11	3 (2012–2013)	496	0	78 (65–93)	21 (18–23)	65 (55–75)	380[E] (220–530)	720[E] (260–1200)
Total	12–19	2 (2009–2011)	504	0	57 (48–69)	18 (15–20)	43 (29–57)	320 (230–410)	410 (340–490)
Total	12–19	3 (2012–2013)	506	0	49 (40–61)	15 (13–17)	38 (27–49)	230[E] (140–310)	450 (290–600)
Total	20–39	2 (2009–2011)	353	0.56	55 (46–66)	16 (14–19)	48 (36–60)	270[E] (120–420)	430 (300–570)
Total	20–39	3 (2012–2013)	347	0	50 (38–66)	16 (10–21)	46[E] (22–70)	160 (120–200)	240[E] (90–390)
Total	40–59	2 (2009–2011)	357	0	66 (53–82)	19 (14–23)	54 (37–71)	270 (200–340)	F
Total	40–59	3 (2012–2013)	307	0	59 (47–75)	22 (19–24)	54 (41–66)	190[E] (95–280)	290[E] (120–450)
Total	60–79	2 (2009–2011)	285	0	63 (54–73)	20 (18–23)	55 (44–65)	220[E] (120–330)	400[E] (210–590)
Total	60–79	3 (2012–2013)	347	0	57 (48–70)	20 (18–23)	43 (32–53)	F	490[E] (220–760)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

ETHYLBENZENE

Ethylbenzene — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2441	17.90	0.026 (0.020–0.033)	<LOD	0.025 (0.017–0.033)	0.084 (0.070–0.098)	0.12 (0.095–0.15)
Males	12–79	3 (2012–2013)	1212	17.49	0.028 (0.022–0.034)	<LOD	0.026 (0.018–0.034)	0.088 (0.063–0.11)	0.14 (0.096–0.18)
Females	12–79	3 (2012–2013)	1229	18.31	0.025 (0.018–0.033)	<LOD	0.025 (0.016–0.033)	0.080 (0.057–0.10)	0.11 (0.076–0.14)
Total	12–19	3 (2012–2013)	731	19.84	0.020 (0.016–0.027)	<LOD	0.021 (0.015–0.027)	0.064 (0.044–0.084)	0.081 (0.056–0.11)
Total	20–39	3 (2012–2013)	532	17.29	0.026 (0.019–0.035)	<LOD	0.026[E] (0.012–0.041)	0.077[E] (0.040–0.11)	0.12[E] (0.058–0.17)
Total	40–59	3 (2012–2013)	591	14.89	0.029 (0.024–0.037)	<LOD	0.027 (0.020–0.034)	0.10 (0.082–0.12)	0.14 (0.10–0.18)
Total	60–79	3 (2012–2013)	587	19.08	0.025 (0.019–0.032)	<LOD	0.024 (0.016–0.032)	0.079 (0.064–0.094)	0.12[E] (0.062–0.17)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

STYRENE

Styrene — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2063	7.61	0.043[E] (0.029–0.062)	F	0.043 (0.030–0.055)	0.12 (0.076–0.16)	0.17[E] (0.10–0.23)
Males	12–79	3 (2012–2013)	1036	6.95	0.043[E] (0.029–0.064)	F	0.045 (0.033–0.057)	0.12 (0.079–0.15)	0.17[E] (0.099–0.24)
Females	12–79	3 (2012–2013)	1027	8.28	0.042[E] (0.028–0.061)	F	0.041 (0.028–0.055)	0.11[E] (0.062–0.17)	0.16[E] (0.092–0.23)
Total	12–19	3 (2012–2013)	626	8.47	0.037[E] (0.024–0.057)	F	0.040 (0.029–0.052)	0.094[E] (0.029–0.16)	0.15[E] (0.063–0.24)
Total	20–39	3 (2012–2013)	435	7.36	0.043[E] (0.029–0.065)	<LOD	0.043[E] (0.024–0.061)	0.12[E] (0.055–0.18)	0.18[E] (0.10–0.26)
Total	40–59	3 (2012–2013)	493	5.68	0.045[E] (0.031–0.066)	0.016[E] (<LOD–0.026)	0.044 (0.032–0.056)	0.13 (0.090–0.16)	0.18[E] (0.11–0.25)
Total	60–79	3 (2012–2013)	509	8.64	0.041[E] (0.027–0.063)	F	0.044 (0.029–0.058)	0.11 (0.069–0.15)	0.14[E] (0.049–0.24)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

TETRACHLOROETHYLENE (PERCHLOROETHYLENE)

Tetrachloroethylene (Perchloroethylene) — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2453	60.82	–	<LOD	<LOD	0.10 (0.067–0.14)	0.17[E] (0.10–0.23)
Males	12–79	3 (2012–2013)	1228	58.96	–	<LOD	<LOD	0.13 (0.086–0.17)	0.19 (0.13–0.25)
Females	12–79	3 (2012–2013)	1225	62.69	–	<LOD	<LOD	0.096[E] (0.060–0.13)	0.13[E] (0.039–0.22)
Total	12–19	3 (2012–2013)	739	60.76	–	<LOD	<LOD	F	F
Total	20–39	3 (2012–2013)	543	60.04	–	<LOD	<LOD	0.093[E] (0.052–0.13)	0.15[E] (0.080–0.23)
Total	40–59	3 (2012–2013)	587	65.08	–	<LOD	<LOD	0.10[E] (0.058–0.14)	0.13 (0.089–0.17)
Total	60–79	3 (2012–2013)	584	57.36	–	<LOD	<LOD	0.16[E] (0.062–0.25)	F

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

TOLUENE

Toluene — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2449	0.69	0.096 (0.083–0.11)	0.036 (0.030–0.042)	0.079 (0.067–0.090)	0.39 (0.32–0.46)	0.58 (0.46–0.71)
Males	12–79	3 (2012–2013)	1224	0.65	0.098 (0.081–0.12)	0.034 (0.025–0.043)	0.081 (0.066–0.095)	0.42 (0.33–0.51)	0.59 (0.42–0.77)
Females	12–79	3 (2012–2013)	1225	0.73	0.093 (0.081–0.11)	0.037 (0.034–0.041)	0.077 (0.064–0.089)	0.35 (0.24–0.46)	0.55[E] (0.34–0.76)
Total	12–19	3 (2012–2013)	732	0.55	0.074 (0.066–0.083)	0.034 (0.026–0.042)	0.070 (0.058–0.082)	0.19 (0.14–0.24)	0.26 (0.19–0.32)
Total	20–39	3 (2012–2013)	533	0.94	0.089 (0.069–0.11)	0.036 (0.028–0.045)	0.074 (0.050–0.098)	0.29[E] (0.16–0.43)	0.42[E] (0.23–0.61)
Total	40–59	3 (2012–2013)	594	0.51	0.12 (0.10–0.14)	0.041 (0.033–0.049)	0.085 (0.071–0.10)	0.58 (0.38–0.79)	0.86 (0.64–1.1)
Total	60–79	3 (2012–2013)	590	0.85	0.086 (0.070–0.11)	0.031 (0.024–0.039)	0.080 (0.065–0.096)	0.31 (0.22–0.40)	0.46 (0.39–0.53)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

TRICHLOROETHYLENE

Trichloroethylene — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2474	99.51	–	<LOD	<LOD	<LOD	<LOD
Males	12–79	3 (2012–2013)	1240	99.35	–	<LOD	<LOD	<LOD	<LOD
Females	12–79	3 (2012–2013)	1234	99.68	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	746	99.73	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	543	99.63	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	594	99.33	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	591	99.32	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

TRIHALOMETHANES

Bromodichloromethane

Bromodichloromethane — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2499	98.88	–	<LOD	<LOD	<LOD	<LOD
Males	12–79	3 (2012–2013)	1245	98.96	–	<LOD	<LOD	<LOD	<LOD
Females	12–79	3 (2012–2013)	1254	98.80	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	744	98.12	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	556	98.92	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	595	99.66	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	604	99.01	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

Dibromochloromethane

Dibromochloromethane — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2527	97.07	–	<LOD	<LOD	<LOD	<LOD
Males	12–79	3 (2012–2013)	1263	96.52	–	<LOD	<LOD	<LOD	<LOD
Females	12–79	3 (2012–2013)	1264	97.63	–	<LOD	<LOD	<LOD	<LOD
Total	12–19	3 (2012–2013)	757	96.83	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	557	97.13	–	<LOD	<LOD	<LOD	0.015[E] (<LOD–0.023)
Total	40–59	3 (2012–2013)	604	98.01	–	<LOD	<LOD	<LOD	<LOD
Total	60–79	3 (2012–2013)	609	96.39	–	<LOD	<LOD	<LOD	<LOD

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

Tribromomethane (Bromoform)

Tribromomethane (Bromoform) — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2496	94.79	–	<LOD	<LOD	<LOD	0.010[E] (<LOD–0.015)
Males	12–79	3 (2012–2013)	1244	95.02	–	<LOD	<LOD	<LOD	0.012[E] (<LOD–0.016)
Females	12–79	3 (2012–2013)	1252	94.57	–	<LOD	<LOD	<LOD	<LOD[E] (<LOD–0.013)
Total	12–19	3 (2012–2013)	744	94.49	–	<LOD	<LOD	<LOD	<LOD
Total	20–39	3 (2012–2013)	554	94.40	–	<LOD	<LOD	<LOD	<LOD
Total	40–59	3 (2012–2013)	595	96.47	–	<LOD	<LOD	<LOD	0.011[E] (<LOD–0.016)
Total	60–79	3 (2012–2013)	603	93.86	–	<LOD	<LOD	<LOD	F

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Trichloromethane (Chloroform)

Trichloromethane (Chloroform) — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2527	77.44	–	<LOD	<LOD	0.021 (0.016–0.026)	0.029 (0.019–0.038)
Males	12–79	3 (2012–2013)	1263	77.51	–	<LOD	<LOD	0.021 (0.015–0.027)	0.035[E] (0.018–0.052)
Females	12–79	3 (2012–2013)	1264	77.37	–	<LOD	<LOD	0.021 (0.016–0.027)	0.028 (0.019–0.037)
Total	12–19	3 (2012–2013)	757	77.81	–	<LOD	<LOD	0.020[E] (<LOD–0.028)	0.031[E] (<LOD–0.049)
Total	20–39	3 (2012–2013)	557	76.48	–	<LOD	<LOD	0.023 (0.016–0.029)	0.036[E] (0.015–0.058)
Total	40–59	3 (2012–2013)	604	78.81	–	<LOD	<LOD	0.019 (<LOD–0.025)	0.027 (0.019–0.036)
Total	60–79	3 (2012–2013)	609	76.52	–	<LOD	<LOD	0.020[E] (<LOD–0.027)	0.028[E] (<LOD–0.041)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

XYLENES

m-Xylene & *p*-Xylene

m-Xylene & *p*-xylene — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2326	14.53	0.062 (0.050–0.079)	<LOD	0.063 (0.047–0.080)	0.20 (0.14–0.26)	0.30 (0.20–0.39)
Males	12–79	3 (2012–2013)	1172	13.31	0.065 (0.051–0.082)	<LOD	0.062 (0.045–0.080)	0.21 (0.15–0.28)	0.34[E] (0.19–0.49)
Females	12–79	3 (2012–2013)	1154	15.77	0.060 (0.047–0.078)	<LOD	0.064 (0.046–0.082)	0.19 (0.12–0.26)	0.27 (0.18–0.36)
Total	12–19	3 (2012–2013)	701	16.83	0.049 (0.037–0.065)	<LOD	0.055 (0.039–0.071)	0.14[E] (0.086–0.19)	0.18 (0.14–0.23)
Total	20–39	3 (2012–2013)	500	14.00	0.058 (0.045–0.074)	<LOD	0.057[E] (0.026–0.088)	0.16 (0.11–0.22)	0.25 (0.17–0.32)
Total	40–59	3 (2012–2013)	559	11.99	0.074 (0.056–0.096)	<LOD	0.068 (0.052–0.084)	0.28[E] (0.17–0.39)	0.42 (0.29–0.54)
Total	60–79	3 (2012–2013)	566	14.66	0.060 (0.045–0.079)	<LOD	0.061 (0.043–0.078)	0.18 (0.15–0.21)	0.25[E] (0.12–0.37)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

o-Xylene

o-Xylene — Geometric means and selected percentiles of whole blood concentrations (µg/L) for the Canadian population aged 12–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	%<LOD[a]	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	12–79	3 (2012–2013)	2336	41.05	–	<LOD	0.022[E] (0.010–0.034)	0.087 (0.061–0.11)	0.11 (0.083–0.14)
Males	12–79	3 (2012–2013)	1164	40.55	–	<LOD	0.022[E] (0.0097–0.033)	0.088 (0.061–0.11)	0.12 (0.075–0.16)
Females	12–79	3 (2012–2013)	1172	41.55	–	<LOD	0.022[E] (0.011–0.034)	0.081 (0.052–0.11)	0.11 (0.082–0.14)
Total	12–19	3 (2012–2013)	692	43.93	–	<LOD	F	0.057 (0.041–0.072)	0.075 (0.053–0.098)
Total	20–39	3 (2012–2013)	515	42.14	–	<LOD	0.020[E] (0.0095–0.030)	0.077[E] (0.036–0.12)	0.11[E] (0.053–0.17)
Total	40–59	3 (2012–2013)	565	38.94	0.022[E] (0.014–0.034)	<LOD	0.029[E] (0.012–0.045)	0.099 (0.075–0.12)	0.13 (0.095–0.17)
Total	60–79	3 (2012–2013)	564	38.65	0.016[E] (0.010–0.023)	<LOD	0.016[E] (<LOD–0.027)	0.076 (0.055–0.098)	0.10[E] (0.030–0.17)

a If >40% of samples were below the LOD, the percentile distribution is reported but means were not calculated.

E Use data with caution.

F Data is too unreliable to be published.

Appendix A: Limits of Detection

Laboratory analyses of environmental chemicals and creatinine were performed at analytical laboratories within Health Canada, l'Institut national de santé publique du Québec (INSPQ), and the ALS Laboratory Group. Laboratories developed standardized operating procedures for the analytical methods used to measure environmental chemicals or their metabolites in biological samples. The limit of detection (LOD) is defined as the lowest concentration of the analyte whose analytical response is measured to be greater than the noise level with 99% confidence and evaluated using USEPA methodology (USEPA, 2015).[a]

	Cycle 1	Cycle 2	Cycle 3
Metals and Trace Elements in Blood			
Cadmium	0.04 µg/L	0.04 µg/L	0.08 µg/L
Lead	0.02 µg/dL	0.1 µg/dL	0.2 µg/dL
Methylmercury	—	—	0.2 µg/L[b]
Total mercury	0.1 µg/L	0.1 µg/L	0.4 µg/L
Metals and Trace Elements in Urine			
Arsenate	—	0.8 µg/L[c,d]	0.8 µg/L[c]
Arsenite	—	0.8 µg/L[c,d]	0.8 µg/L[c]
Arsenocholine	—	—	0.8 µg/L[c]
Arsenocholine and arsenobetaine	—	0.8 µg/L[c,d]	0.8 µg/L[c]
Dimethylarsinic acid	—	0.8 µg/L[c,d]	0.8 µg/L[c]
Monomethylarsonic acid	—	0.8 µg/L[c,d]	0.8 µg/L[c]
Fluoride	—	20 µg/L	10 µg/L
Inorganic mercury	0.1 µg/L	—	0.2 µg/L
Benzene Metabolites in Urine			
S-Phenylmercapturic acid	—	0.08 µg/L	0.08 µg/L
trans,trans-Muconic acid	—	0.8 µg/L	0.6 µg/L
Environmental Phenols			
Bisphenol A	0.2 µg/L	0.2 µg/L	0.2 µg/L
Triclosan	—	3 µg/L	5 µg/L
Nicotine Metabolite			
Cotinine	1 µg/L	1 µg/L	1 µg/L
Volatile Organic Compounds in Blood			
Benzene	—	—	0.007 µg/L
Bromodichloromethane	—	—	0.01 µg/L
Dibromochloromethane	—	—	0.007 µg/L
Ethylbenzene	—	—	0.01 µg/L
m-Xylene and *p*-xylene	—	—	0.02 µg/L
o-Xylene	—	—	0.009 µg/L
Styrene	—	—	0.01 µg/L
Tetrachloroethylene (Perchloroethylene)	—	—	0.02 µg/L
Toluene	—	—	0.01 µg/L
Tribromomethane (Bromoform)	—	—	0.01 µg/L
Trichloroethylene	—	—	0.03 µg/L
Trichloromethane (Chloroform)	—	—	0.01 µg/L
Acrylamide			
Acrylamide haemoglobin adduct	—	—	10 pmol/g haemoglobin
Glycidamide haemoglobin adduct	—	—	20 pmol/g haemoglobin

	Cycle 1	Cycle 2	Cycle 3
Polycyclic Aromatic Hydrocarbon Metabolites			
Benzo[*a*]pyrene Metabolite			
3-Hydroxybenzo[*a*]pyrene	—	0.002 µg/L	0.003 µg/L
Chrysene Metabolites			
2-Hydroxychrysene	—	0.004 µg/L	0.005 µg/L
3-Hydroxychrysene	—	0.003 µg/L	0.003 µg/L
4-Hydroxychrysene	—	0.003 µg/L	0.002 µg/L
6-Hydroxychrysene	—	0.006 µg/L	0.002 µg/L
Fluoranthene Metabolite			
3-Hydroxyfluoranthene	—	0.008 µg/L	0.008 µg/L
Fluorene Metabolites			
2-Hydroxyfluorene	—	0.003 µg/L	0.006 µg/L
3-Hydroxyfluorene	—	0.001 µg/L	0.002 µg/L
9-Hydroxyfluorene	—	0.003 µg/L	0.004 µg/L
Naphthalene Metabolites			
1-Hydroxynapththalene	—	0.1 µg/L	0.02 µg/L
2-Hydroxynapththalene	—	0.05 µg/L	0.03 µg/L
Phenanthrene Metabolites			
1-Hydroxyphenanthrene	—	0.005 µg/L	0.002 µg/L
2-Hydroxyphenanthrene	—	0.003 µg/L	0.002 µg/L
3-Hydroxyphenanthrene	—	0.003 µg/L	0.002 µg/L
4-Hydroxyphenanthrene	—	0.001 µg/L	0.003 µg/L
9-Hydroxyphenanthrene	—	0.004 µg/L	0.004 µg/L
Pyrene Metabolite			
1-Hydroxypyrene	—	0.002 µg/L	0.003 µg/L
Adjustment Factor			
Urinary creatinine	3 mg/dL	4 mg/dL	5 mg/dL

a US EPA 2015. Definition and procedure for the determination of the method detection limit - Revision 1.11, Federal Regulation 40 CFR 136 Appendix B. United States Environmental Protection Agency, Washington, DC.

b Reported as µg Hg/L

c Reported as µg As/L

d In the *Second Report on Human Biomonitoring of Environmental Chemicals in Canada*, all speciated arsenic was reported as µg of arsenic species per litre (e.g. µg arsenate/L). For this reason, the values presented in this report may differ from those in the *Second Report*.

Appendix B: Conversion Factors

Units of measurement are important. Results are reported here using standard units; however, units can be converted using the conversion factors presented below for comparison of data with other data sets.

Unit	Abbreviation	Value
litre	L	—
decilitre	dL	10^{-1} L
millilitre	mL	10^{-3} L
microlitre	µL	10^{-6} L
gram	g	—
milligram	mg	10^{-3} g
microgram	µg	10^{-6} g
nanogram	ng	10^{-9} g
picogram	pg	10^{-12} g

Data can be converted from µg/L to µmol/L using the molecular weight (MW) of the chemical using the formula:

Y µmol/L = X µg/L x conversion factor (CF), where the CF is equivalent to 1/MW.

	MW (g/mol)	CF (µg/L → µmol/L)
Metals and Trace Elements		
Arsenate	—	0.01335[a]
Arsenite	—	0.01335[a]
Arsenocholine	—	0.01335[a]
Arsenocholine and arsenobetaine	—	0.01335[a]
Dimethylarsinic acid	—	0.01335[a]
Monomethylarsonic acid	—	0.01335[a]
Cadmium	112.41	0.00896
Fluoride	19.00	0.05263
Lead	207.20	0.04826[b]
Methylmercury	—	0.00499[c]
Mercury	200.59	0.00499
Benzene Metabolites		
trans,trans-Muconic acid	142.11	0.00704
S-Phenylmercapturic acid	239.29	0.00418
Environmental Phenols		
Bisphenol A	228.29	0.00438
Triclosan	289.54	0.00345
Nicotine Metabolite		
Cotinine	176.22	0.00567

	MW (g/mol)	CF (µg/L → µmol/L)
Volatile Organic Compounds		
Benzene	78.11	0.01280
Bromodichloromethane	163.83	0.00610
Dibromochloromethane	208.28	0.00480
Ethylbenzene	106.17	0.00942
m-Xylene and *p*-xylene	106.17	0.00942
o-Xylene	106.17	0.00942
Styrene	104.15	0.00960
Tetrachloroethylene (Perchloroethylene)	165.83	0.00603
Toluene	92.14	0.01085
Tribromomethane (Bromoform)	252.73	0.00396
Trichloroethylene	131.39	0.00761
Trichloromethane (Chloroform)	119.38	0.00838
Acrylamide		
Acrylamide haemoglobin adduct	—	NA[d]
Glycidamide haemoglobin adduct	—	NA[d]
Polycyclic Aromatic Hydrocarbon Metabolites		
Benzo[*a*]pyrene Metabolite		
3-Hydroxybenzo[*a*]pyrene	268.31	0.00373
Chrysene Metabolites		
2-Hydroxychrysene	244.29	0.00409
3-Hydroxychrysene	244.29	0.00409
4-Hydroxychrysene	244.29	0.00409
6-Hydroxychrysene	244.29	0.00409
Fluoranthene Metabolite		
3-Hydroxyfluoranthene	218.25	0.00458
Fluorene Metabolites		
2-Hydroxyfluorene	182.22	0.00549
3-Hydroxyfluorene	182.22	0.00549
9-Hydroxyfluorene	182.22	0.00549
Naphthalene Metabolites		
1-Hydroxynaphthalene	144.17	0.00694
2-Hydroxynaphthalene	144.17	0.00694
Phenanthrene Metabolites		
1-Hydroxyphenanthrene	194.23	0.00515
2-Hydroxyphenanthrene	194.23	0.00515
3-Hydroxyphenanthrene	194.23	0.00515
4-Hydroxyphenanthrene	194.23	0.00515
9-Hydroxyphenanthrene	194.23	0.00515
Pyrene Metabolite		
1-Hydroxypyrene	218.25	0.00458
Adjustment Factor		
Creatinine	113.12	88.4[e]

a For converting arsenic species from µg As/L to µmol As/L

b For converting Pb from µg/dL to µmol/L

c For converting methylmercury from µg Hg/L to µmol Hg/L

d Not applicable

e For converting creatinine from mg/dL to µmol/L

Appendix C: Creatinine

Creatinine — Geometric means and selected percentiles of urine concentrations (mg/dL) for the Canadian population aged 6–79 years by age group, Canadian Health Measures Survey cycle 1 (2007–2009).

Group	Age (years)	Cycle	N	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	6–79	1 (2007–2009)	5515	83 (78–89)	27 (23–30)	93 (86–99)	210 (200–220)	250 (240–260)
Males	6–79	1 (2007–2009)	2663	100 (97–110)	36 (28–43)	110 (100–110)	230 (220–240)	270 (250–280)
Females	6–79	1 (2007–2009)	2852	68 (62–74)	22 (18–25)	75 (66–84)	180 (160–190)	210 (200–230)
Total	6–11	1 (2007–2009)	1042	66 (60–72)	24 (18–29)	74 (67–81)	140 (130–150)	170 (160–180)
Total	12–19	1 (2007–2009)	992	120 (110–130)	39 (30–47)	130 (120–140)	250 (230–280)	300 (260–330)
Total	20–39	1 (2007–2009)	1172	90 (81–100)	29 (22–36)	99 (91–110)	230 (210–240)	280 (250–300)
Total	40–59	1 (2007–2009)	1221	78 (73–84)	24 (19–28)	86 (76–96)	210 (190–230)	240 (230–250)
Total	60–79	1 (2007–2009)	1088	72 (68–75)	26 (22–31)	81 (77–85)	150 (140–160)	190 (170–220)

Creatinine — Geometric means and selected percentiles of urine concentrations (mg/dL) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 2 (2009–2011).

Group	Age (years)	Cycle	N	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	2 (2009–2011)	6299	100 (100–110)	35 (33–38)	110 (110–120)	240 (230–260)	280 (270–300)
Males	3–79	2 (2009–2011)	3031	120 (120–130)	47 (42–53)	130 (120–150)	260 (240–280)	310 (280–340)
Females	3–79	2 (2009–2011)	3268	89 (85–94)	30 (27–32)	100 (96–100)	200 (180–230)	250 (240–270)
Total	3–5	2 (2009–2011)	572	59 (55–63)	26 (24–29)	61 (55–67)	110 (110–120)	140 (110–160)
Total	6–11	2 (2009–2011)	1059	88 (83–94)	37 (33–42)	98 (94–100)	170 (160–170)	190 (170–210)
Total	12–19	2 (2009–2011)	1042	130 (120–150)	52 (36–68)	150 (140–160)	270 (260–280)	300 (270–340)
Total	20–39	2 (2009–2011)	1322	120 (110–130)	37 (25–48)	140 (130–160)	260 (250–280)	330 (270–380)
Total	40–59	2 (2009–2011)	1223	100 (96–110)	33 (27–40)	110 (100–120)	240 (220–260)	280 (260–310)
Total	60–79	2 (2009–2011)	1081	85 (80–89)	32 (26–37)	96 (90–100)	180 (170–200)	230 (210–260)

Creatinine — Geometric means and selected percentiles of urine concentrations (mg/dL) for the Canadian population aged 3–79 years by age group, Canadian Health Measures Survey cycle 3 (2012–2013).

Group	Age (years)	Cycle	N	G.M. (95% CI)	10th (95% CI)	50th (95% CI)	90th (95% CI)	95th (95% CI)
Total	3–79	3 (2012–2013)	5704	97 (93–100)	33 (29–37)	100 (100–110)	240 (220–250)	280 (250–300)
Males	3–79	3 (2012–2013)	2847	110 (110–120)	40 (35–46)	120 (110–130)	260 (230–280)	300 (260–340)
Females	3–79	3 (2012–2013)	2857	83 (76–90)	26 (21–30)	93 (81–110)	210 (190–240)	250 (220–270)
Total	3–5	3 (2012–2013)	521	51 (45–58)	19 (14–24)	58 (51–65)	110 (99–110)	120 (110–120)
Total	6–11	3 (2012–2013)	1013	84 (77–92)	35 (28–42)	93 (82–100)	160 (150–180)	200 (170–230)
Total	12–19	3 (2012–2013)	998	130 (120–150)	52 (37–66)	150 (140–160)	280 (260–300)	320 (290–360)
Total	20–39	3 (2012–2013)	1048	110 (98–120)	36 (26–45)	110 (97–130)	270 (220–320)	330 (290–380)
Total	40–59	3 (2012–2013)	1080	95 (86–110)	34 (24–44)	110 (98–110)	220 (200–250)	250 (230–280)
Total	60–79	3 (2012–2013)	1044	84 (76–91)	26 (19–32)	96 (89–100)	190 (170–210)	230 (210–240)